



Danson Mid Park Drainage

Headline Cost Evaluation – Draft for Comment

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This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2008, BS EN ISO 14001: 2004 and BS OHSAS 18001:2007)

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Comments

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1. Introduction

1.1. Commissions and Brief

Following the Scoping Report on Danson Mid Park Drainage, Ref 12950-157 130319 Scoping Report, Waterman Transport and Development has been instructed to consider the following items to allow the London Borough of Bexley to feed information into the financial bidding process.

The items include:

1. Budget headline construction costs for each of the 3 options.
2. Budget fee estimates for consultants design, supervision and CDM-C.
3. Any licensing or consent fees.

2. Location and Description of Site

2.1. Location

Figure 1: Location Plan – Danson Mid Park



Source: 12950 157 C SA 90 001 LOC PLAN A01

Danson Park is situated between Bexleyheath and Welling at OS grid co-ordinates 547302E 174992N. Danson Road runs north to south along the eastern boundary of the Park connecting the A207 Parkview Road to the A2 East Rochester Way.

2.2. General description of the area

The park is approximately 78 hectares in area with Danson Lake (7.8 hectares) located at the centre with Danson Dam at the eastern end. The area to be considered within this costing exercise is the 11 hectares to the north of the lake highlighted in the plan above

3. Design Options

3.1.

To evaluate the capital construction costs three design options were considered and are described below:

- **Bronze Option** – This option only considers the wider land drainage issues. The requirement is to ensure that the effects of more severe summer rainfall events are reduced sufficiently to allow the Danson Festival to proceed whilst improving recovery time following the event.
- **Silver Option** – This option aims to provide everything included in the bronze option as well as the following items: soil improvement, specialist grass seeding and grass reinforcement at key locations.
- **Gold Option** – This option aims to provide everything included in the silver option as well as the following items: specialist football pitch drainage (3No) in addition to the proposed land drainage, football pitch regrading (3No), improved playing surfaces (3No), 12 months maintenance to new playing surfaces,

3.2. Consultants design, supervision and CDM-C costs

As lead consultants Waterman Transport and Development will carry out the majority of the design and supervision and will manage the sub consultants. The sub-consultants are likely to include:

1. Topographical Surveyor
2. Agronomist
3. CDM-C

Further consultation will be required with local groups and stakeholders as well as the EA, although none these will have costs assigned directly to their input.

3.3. Licensing and consent fees

The only licensing or consent fees likely to be incurred are from possible land drainage connections into Danson Lake. This will incur a land drainage consent application fee from the EA for each connection.

4. Preliminary Cost Estimates

4.1. Headline Construction Costs

	Bronze Option	Silver Option	Gold Option
Item Description	Cost	Cost	Cost
Preliminaries	£6,400	£7,400	£8,400
Land Drainage – general field drainage including filled mole drainage over a perforated collector pipe system with filtered and sumped outfalls into Danson Lake (mole drains at 5m spacing and collectors at 80m spacing)	£115,000	£115,000	£90,000
Grass reinforcement at key access locations	N/A	£7,000	£7,000
Soil improvement	N/A	£100,000	£86,000
Grass seeding and one off maintenance	N/A	£34,000	£29,000
Specialist football pitch drainage 3No. Includes: preliminaries, setting up, transport, installation of pipe drainage system, installation of sand grooves, application of fertilizer, seeding and making good	N/A	N/A	£96,000
Regrading and improvement of playing surfaces, 3No. includes preliminaries, setting up, transport, removal of vegetation, importing of topsoil, cultivation, grading, sand amelioration, applying fertilizer seeding and reinstatement	N/A	N/A	£59,400
12 Month maintenance of 3 improved pitches	N/A	N/A	£43,500
20% Contingencies	£24,280	£52,680	£83,860
Total	£145,680	£316,080	£503,160

4.2. Consultancy Fees

	Bronze Option	Silver Option	Gold Option
Item Description	Cost	Cost	Cost
Waterman Transport and Development Feasibility Fees	£11,900	£11,900	£11,900
Waterman Transport and Development Detailed Design Fees	£10,000	£12,000	£14,000
Agronomist Sub-Consultancy Fees	£9,200	£9,200	£9,200
Topographical Survey Sub-consultant Fees	£2,500	£2,500	£2,500
Site Supervision Fees	£5,700	£5,700	£7,500
CDM-C Fees	£1,800	£2,000	£2,200
20% Contingencies	£8,220	£8,660	£9,460
Total	£49,320	£51,960	£56,760

4.3. Licensing and Consent Fees

	Bronze Option	Silver Option	Gold Option
Item Description	Cost	Cost	Cost
EA Land Drainage Consent (£50 per connection)	£100	£100	£100
Total	£100	£100	£100

5. Programme / Timescales

The timescales shown in the table below are for completion of each stage of the proposed works and include all of the 11 Hectare site.

5.1.1 Timescales

	Bronze Option	Silver Option	Gold Option
Item Description	Timescale	Timescale	Timescale
Consultation Period	7 weeks	7 weeks	7 weeks
Agronomist - Mobilisation, Site Work, Report Production	4 weeks	4 weeks	4 weeks
Topographical Survey – Mobilisation, Site Work, Issue of survey	4 weeks	4 weeks	4 weeks
Waterman Feasibility Study	7 weeks	7 weeks	7 weeks
Waterman Detailed Design	4 weeks	5 weeks	6 weeks
Site Supervision	10 weeks	12 weeks	16 weeks
Total	£		

When considering timescales at such an early stage it is important to note the following:

1. The consultation period, agronomy survey and topographical survey will be carried out concurrently. For details of the programme see 5.1.2 below. (The programme does not show statutory holidays)
2. The period allowed for the sub-consultants was correct at the time of asking and is dependent on workloads and weather conditions.
3. The detailed design could be affected by the findings of the feasibility study and by the extent of the proposed work following confirmation of the proposed expenditure
4. The construction period is likely to start after the 5th of November and progress will be weather dependent.
5. These timescales above consider the development of the entire 11 hectare site. Any reduction in proposals is likely to reduce construction time. It would not however reduce the time required to complete the feasibility study or detailed design by a significant amount.



5.1.2 Programme



6. Summary

6.1.

At this early stage the costs estimates are conservatively based on typical sites without undue complications. The actual cost could vary greatly from those indicated depending on the results from further investigations to be completed during the feasibility study.

In summary the headline costs can be collated as follows:

	Bronze Option	Silver Option	Gold Option
Cost Item	Cost	Cost	Cost
Headline Construction Costs	£145,680	£316,080	£503,160
Consultancy Fees	£49,320	£51,960	£56,760
Consent Fees	£100	£100	£100
Total	£195,100	£368,140	£560,020

The Fees shown above allow for remediation work to the entire 11 Hectare site. Depending on budget available and proposed usage levels the construction costs could be reduced by addressing only selected areas of the park or by using value engineering techniques.

The value engineering techniques could include:

1. Increasing the drain spacing
2. Draining only identified hot spots
3. Draining only areas of higher usage
4. Designing for less severe storm events

It should also be noted that, although it was not part of the brief and was not directly addressed within this report, enhanced annual maintenance regimes may be required following any improvement works. This will depend on the agronomist's proposals and restrictions/guidance placed on the scheme by the EA at the consultation stage. The aim would be to minimise any future maintenance requirements at the design stage but as a minimum there is likely to be the need for cleansing of chambers. The maintenance could increase depending on future pesticide and fertilizer usage and restrictions/filters on any outfalls to the lake. The maintenance requirements and associated costs will be further addressed within the proposed feasibility.

7. Addendum

7.1. Budget options

Following initial discussions with the London Borough of Bexley it was requested that additional headline construction costs were provided to incorporate reduced extent of the works. This estimate provides bronze silver and gold construction costs for three football pitches only not the entire park as previously estimated.

7.2. Headline Construction Costs (3 pitches only)

	Bronze Option	Silver Option	Gold Option
Item Description	Cost	Cost	Cost
Preliminaries	£6,400	£7,400	£8,400
Land Drainage – general field drainage including filled mole drainage over a perforated collector pipe system with filtered and sumped outfalls into Danson Lake (mole drains at 5m spacing and collectors at 80m spacing)	£50,000	£50,000	£26,000
Grass reinforcement at key access locations	N/A	£7,000	£7,000
Soil improvement	N/A	£50,000	£5,000
Grass seeding and one off maintenance	N/A	£17,000	£5,000
Specialist football pitch drainage 3No. Includes: preliminaries, setting up, transport, installation of pipe drainage system, installation of sand grooves, application of fertilizer, seeding and making good	N/A	N/A	£96,000
Regrading and improvement of playing surfaces, 3No. includes preliminaries, setting up, transport, removal of vegetation, importing of topsoil, cultivation, grading, sand amelioration, applying fertilizer seeding and reinstatement	N/A	N/A	£59,400
12 Month maintenance of 3 improved pitches	N/A	N/A	£43,500
20% Contingencies	£11,280	£26,280	£50,060
Total	£67,680	£157,680	£300,360

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