

### Cost Increases to deliver Step 4 facility and secure agreement with Newbury Rugby Club.

#### Full details of cost increases

The feasibility works relating to the AGP stated a budget of £866,250 + VAT with a variety of additional costs and provisional sums for other features and the below listed caveats:

As the project progressed the requirements increased to a step 4 facility with a number of other specific requirements and more detailed information received from the site-specific surveys or planning requests and alterations that are briefly listed as:

1. The rugby club specifically asked for assurance that surface water would not run down the steep bank onto their main pitch. In order to achieve this an impermeable drainage blanket is required to the formation of the pitch to tank the area and retain all water within the pitch base prior to having the controlled discharge and outlet. The product and design for this is a ABG ZzPozidrain 7SK250D.NW8 (<https://www.abg-geosynthetics.com/case-studies/landfill-capping-drainage-sutton-landfill-ashfield-uk>) this also assists with concerns relating to item 3 with the built up made ground material where it caps off and reduces surface water running through the material and mitigates potential movement and settlement from swelling of clays etc as well as offers a form of tensile strength to protect the finished surface movement if there is any form of settlement or movement. The additional cost for this features and design is shown within item 5.02 as £53,933.80.
2. Another rugby club request was to ensure a minimum of 0.7-1m flat plateau is made available to the top of the bank outside of the AGP area to allow continued viewing space. SSL have caveated that a flat area of grass will be left but have specifically stated any access or use for spectators is not the design purpose or reason because there is no equality compliant access and the steep bank does not comply with specific H&S requirements and design features. In order to achieve this 0.7m-1m flat plateau a small retaining structure is needed along the 115m length of the AGP area. This wall shall be between 0.6-0.8m and is itemised as 6.02 at an additional cost of £20,470.
3. A document was sent and received in February 2021 as a requirement by the EA for landfill works that took place on the site back in 2012/2013. The area had been re-levelled in the past but the extent and process for the works was not understood until this document was received Wed 10/02/2021. The site had been built up with imported fill material to heights ranging between 3-5m.



Figure 1 – photo of imported fill material for the development area in 2012/13

The document focuses on sign off from the EA regarding the material being non-contaminated material but does not cover any scope on how well the material was compacted in 150mm layers. Large depths of made ground material up to 5m height that was laid over the course of 12 months has a significant risk of being layered during poor weather conditions and not being able to be correctly compacted with risk of settlement over time. The AGP development has a surface tolerance of 10mm for football and rugby certification. If the surface of the AGP moves beyond the 10mm tolerance then it will fail its testing and not be able to be used for any accredited and competitive sporting match. This is particularly pertinent for World Rugby accreditation as they offer insurance for users and if parties are hurt whilst playing without this accreditation then the operator and owners are fully liable.

In order to entirely eradicate this risk then the material would need to be excavated and recompacted in layers. This is not feasible in terms of cost, timing and available space over the site in order to complete the works appropriately. Other mitigating design measures and features have been introduced to the AGP design to assist in mitigating any future concerns of movement and settlement that are listed as:

- Item 4.05 - undertake High Energy Impact Compaction, max 3.5m depth ground improvement – cost increase of £30,625. This work compacts the first 3.5m to ensure an additional 100-200mm compaction takes place over the finished formation footprint.
- Item 4.06 – Survey and re-trim area after HEIC works - £2,609.70.
- Item 4.07 – lime and cement stabilisation works to the formation layer - £60,000 (note this item is currently a provisional sum. Given the varying types of material within the made ground of clay, brick, mortar, asphalt, chalk etc it is currently not known if this can be undertaken until site testing take place on the finished formation layer of material). This work involves the chemical changes to the properties of the soil to enable the formation to become stronger and mitigate any ground movement from beneath.
- Item 5.01 – CCTV scans show root damage to the existing drainage line that runs through the site and a cost of £2,400 has been derived to jetwash and clear out the run.
- Item 5.02 - ABG ZzPozidrain 7SK250D.NW8; as per note 1 this was from a rugby club request but also offers significant benefits to these known issues. £53,933.80.

- Item 6.01 - ABGRID 30/30 Biaxial Geogrid is an engineered tensile material laid to the formation to mitigate any movement and settlement impacting the finished surface. £20,470.
- Item 6.08 – traditionally the AGP area would be formed from a single layer of 40mm asphalt. Due to the settlement risks and issues a 65mm twin course macadam layer has been selected to the AGP area at an additional cost of £39,145.50.

This consideration has raised total additional cost £209,184.

4. The requirement to be increased to step 4 has a number of knock-on effects in terms of cost. The general construction time and associated prelim costs along with sqm cost for 844sqm increased area of base, surfacing, fencing and all other materials. It is difficult to gauge the increase in cost relating to this area. Also given that the items have increased in spec due to the considerations noted in point 3.
5. The stadia requirement for seated and standing accommodation has increased significantly and has an uplift of £81,560.
6. General construction cost and market increase specifically on the shock pad and surfacing system. Many items have increased between 15-30% in 2021. Unable to quantify this element and section.
7. During the further planning consultation stages the following items have also been added to the scope of works and associated costs:
  - The request for U7 grass rugby pitches to be developed and at a very high specification from RFU that is shown partly in items 4 and 12 and mostly in item 11 at an additional cost of £56,665.20.
  - Drainage request for lesser greenfield run off rates creating larger attenuation requirements with a need for a further 100mm stone to the base of the AGP and associated hard standing areas at an additional cost of £57,855.
  - Additional request for further microplastic migration mitigation features such as Hauraton Drainage Channel at an additional cost of £16,200.
  - Request from ecology to further restrict lighting spillage to the north west corner tree / hedge line at an additional cost of £5,950.
  - Additional acoustic fencing to the north west corner £6774.25.
  - Additional 100% recycled trekboards to retain rubber crumb and mitigate infill / microplastic migration - £8,308.20.

This consideration has raised total additional cost £151,425.65.

8. Client additional cost of £8,500 for intelligent play system.
9. Rugby club request for bespoke gates and locations - £3,850.
10. Client additional costs for higher end maintenance equipment with provisional sum of £40k.
11. SSL placed a provisional sum of £6k for impact to the not yet completed LEMP / CEMP to the contractors' operational methods of working.

12. SSL have placed a provisional sum of £10k for minor design features on any potential benching / stalls or other site furniture equipment etc that has not yet been discussed.
13. SSL have added all sports equipment discussed to date with additional of rugby posts, sockets and other features for additional costs of £14,125.