

# A.G.A. Group - Case Study



**Client: Bowmer & Kirkland Ltd.**  
St George's Park  
Burton on Trent  
DE13 9RN

**Project: National Football Centre**

**A.G.A. Claymat Hotel Lake Project**

**Commenced:** June 2012

**Complete:** October 2012

**A.G.A. Bioengineering Systems Ltd**  
Sub Contractor



CONCEPT TO COMPLETION

## Groundwork and Installation

- A. Design proposals.
- B. Grade and profile lake and beach area.
- C. Drain excavation prior to lining.
- D. Construct and install geosynthetic clay liner (GCL).
- E. Install beach area GCL Liner
- F. Install vegetated coir rolls to specification.
- G. Install and place vegetated coir pallets.
- H. Facilitate natural filling and topping up.
- I. Reinststate site.
- J. Install and commission LG Sonic algae control system.

Principal Products and Materials	Supplier
A.G.A. GCL Claymat	A.G.A. Group
Pre-vegetated coir fibre rolls	A.G.A. Group
Pre-established coir-fibre Pallets	A.G.A. Group
A.G.A. LG Sonic XXL algae control unit	A.G.A. Group
6 Species of Aquatic plants	A.G.A. Group

*Glyceria fluitans* – *Butomus umbellatus* - *Typha latifolia*  
*Phragmites australis* – *Carex riparia* - *Iris pseudacorus*



St. George's Park has implemented a 20 year Biodiversity Action Plan which has been prepared to provide a framework so that the site can be managed to maintain and promote biodiversity without compromising the primary function of the National Football Centre. St. George's Park occupies an area of approximately 142 hectares and is set in a rural landscape with a gently rolling topography. Amongst a range of initiatives the BAP includes prescriptions for habitat creation such as parklands, lakes, managing existing habitats such as hedgerows, managing species growth such as installing bat and bird boxes and monitoring progress across the site.

A.G.A. Group was appointed as the contractor to construct the lake and aquatic flora feature located at the front of the NFC hotel complex. The objectives within the location were to deliver an aesthetic outlook, provide habit and collect surface runoff.

Our team worked with the project engineers to create a lake designed to be self-sustaining, thus mitigating any major future maintenance requirement. We formulated a planting regime and provided plants pre-grown in coir modules from our specialist aquatic nurseries in Merton.



The parameters were established, excavated, drained and profiled according to specification. The structure was lined through with A.G.A. Claymat. Claymat is a reinforced GCL consisting of a layer of natural sodium bentonite between a woven and non-woven geotextiles, needle punched together to provide a securely sealed water containment structure. Inlet piles were installed through the liner and plugged prior to filling the lake.



The lake has a maximum depth 1200mm with 300mm deep margins of varying width up to 5m. These berms are to accommodate marginal planting with our pre-vegetated 300mm diameter coir roll and pre-vegetated 1m x 1m coir pallets established with native aquatic plants.

The lake was filled and the water level maintained at capacity for 3 months before handover to the main contractors.



Pre-grown coir pallets were positioned and anchored to create the natural development of an aquatic vegetation habitat in the lake margins. Plant species were provided at the rate of 18 per 1m<sup>2</sup> and were firmly rooted into the coir pallet before delivery. Pre-grown coir units ensure rapid, healthy establishment of lakeside vegetation.



To prestige locations such as the NFC, appearance is everything. To maintain clear water within the lake, A.G.A. supplied and installed the high technology LG ultrasonic algae control system, which safely transmits a complex pattern of ultrasonic vibrations through the water that cause the cell vacuole to rupture killing only the algae.

**The lake was in full glory well before the opening by the Duke and Duchess of Cambridge on 9 October 2012**

# A.G.A. Group

- **Bio-engineering systems**
- **Design, planning and development**
- **Environmental impact assessment**
- **Fluvial engineering**
- **Erosion assessment and control**
- **Pond and lake construction and restoration**
- **Floating islands, wetlands and reed beds**
- **Wetland conservation and ecology**
- **Water quality and management**
- **Aquatic weed control**
- **Fisheries management and fish health**

**CONCEPT TO COMPLETION**

The A.G.A. Group installation teams operate solely within the field of aquatic and bioengineering. We operate a policy of 'Best Practice' and are bound by the Code of Conduct of both the Institute of Fisheries Management and the Society of Biology. The A.G.A. Group will quote for the supply of materials, their installation or for 'turnkey' projects.



A.G.A. is Quality assured to: ISO9001: 2008, ISO14001: 2004 and 18001: 2007

A.G.A. Group, MMG and MHP and AGACES are trading styles of A.G.A. Bio-engineering Systems Limited



**'Concept to Completion'**



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