

Granish WwTW - Aviemore

£7m allocated for new works in top tourist area

Granish is located near Aviemore in the very distinctive setting of the Scottish Highlands, which is now part of the Cairngorms National Park. The area is a key tourist destination and it is estimated that visitors spend around £1 billion a year across the highland area. It is this steady growth in visitors that has seen the existing WwTW plant run at full capacity. The existing WwTW was constructed in the late 1960s and was given a capacity extension in 1980. This made it capable of treating a population equivalent (PE) of between 7500 and 8000. After investigations, a scope of works was developed that would increase the (PE) to around 11,250, the new works is capable of treating imported sludge from surrounding works and septic tanks, increasing environmental protection for the National Park.



Granish WwTW - Aviemore

courtesy Scottish Water Solutions

£7m was allocated to construct 4 pumping stations and 2.5km of twin pumping main; a storm tank with a capacity of 605m³; inlet works for removing solids and grit; 4 concrete tanks acting as sequential Batch reactors, each with a capacity of 1M litres; 2 sludge holding tanks, and acceptance screens; 2 sludge de-waterers; and a control building.

Construction started in May 2004, on a greenfield site, and flows were turned a year later, allowing the existing plant to be decommissioned and the site re-used to house a permanent storm tank.

Contracting partner GMJV benefited from the proximity to the A9 trunk road, as this reduced the logistical challenges faced on other projects in the Highlands. However, during the winter months, while local skiers welcomed the heavy snow falls, the project team did not. and a number of days were lost.

This position was recovered through a number of programme saving initiatives. The initiative which gave the greatest saving being the conversion of an existing aeration lane at Dalfaber into the permanent storm tank, reducing the quantity of imported fill and the need for a pre-cast concrete tank. Another being the reduction of process establishment time by pumping seed sludge from the existing aeration tanks at Dalfaber via the new pumping main to Granish. This vastly reduced the time required for biological levels to reach the requirements.

These initiatives meant that Granish WwTW was completed on time and under budget.

Efficiencies were also gained through the use of a Project Clustering System, as GMJV also had two other projects at Grantown on Spey and at Nethy Bridge, all within 15 miles of Aviemore, these were all managed by the same management team based at the Aviemore site office. This was a first for the North West Area, being all under one roof it made for a quicker response to any construction/commissioning queries.

This structure also allowed GMJV to move specialist staff around the three sites to carry out key elements of work that required certain skills giving better utilisation of resources.

Re-use of existing equipment was also undertaken as part of this project, The Sludge Acceptance Screen from a nearby site at Grantown on Spey was removed from site, refurbished and reinstalled at the new Granish site. Also, the existing Inlet Screen that was at Dalfaber, which was going for scrap, was refurbished and installed at a small WwTP at Carrbridge for SW to replace a none compliant Step Bar Screen, giving a saving of over 50% against SW budget for a new installation and at the same time re-using existing plant.

During the commissioning phase both the old and new plants were controlled in tandem through detailed flow arrangements until the



Granish WwTW - Aviemore

courtesy Scottish Water Solutions

biological process at the new plant reached an acceptable level. This ensured that outfalls were kept within the limits set by the Scottish Environmental Protection Agency (SEPA).

Following the project's successful completion, the site was selected to hold a Design Workshop Review by the SWS Knowledge Management Design Group. Following this review 16 Feedback for Design initiatives were identified that would be fed back into the SWS design team for future projects.

Both Scottish Water and Scottish Water Solutions communications teams played a vital role in keeping a variety of stakeholders informed of the progress with the project and the community representatives visited once it was in the final stages of commissioning.

During the project GMJV's Safety Advisor visited the local primary school and gave a presentation on construction sites and the dangers of playing on them. Items of plant were brought to site to give children close contact with them and understand the dangers they can pose. During the following few weeks, the children were asked to produce their own safety posters, which were judged by a local representative from the HSE, who had been invited to carry out the role. Following the judging the children were taken to site and given a tour of the project and their posters were displayed on site as a reminder to all.

The collaboration between communications teams was recognised at the National Business Awards for Scotland 2005, where they won the Customer Focus Award for their work across Scotland.

Granish was handed over to the client, Scottish Water, on the 23rd of November 2005. ■

QUANTUM QUBE
UK Patent No.2371088

The NEW intelligent surge vessel control system for new and existing Installations



826b

- **The only surge controller offering system safety under all conditions**
- **Cost Effective**
Pipeline failure risk reduction
- **Environmentally Friendly**
No air vent means running costs minimised
- **Reliable**
Avoids bladder/elastomer installations
- **Low Maintenance**
Unattended automatic operation
- **Vessel Status Display**
Provides clear operator information
- **Simple Commissioning Procedure**
Increases customer confidence
- **Energy Efficient**

Designed for all surge control systems. Water or sewage, new or existing. Variable speed pumps, multiple pumps, varying pump heads.






QED
QUANTUM ENGINEERING DEVELOPMENTS LTD

Quantum House, Saxon Business Park
Stoke Prior, Bromsgrove, Worcs. B60 4AD
Phone: +44 (0) 1527 577888 Fax: +44 (0) 1527 577007
Email: sales@quantumeng.co.uk www.quantumeng.co.uk