

# DSR SEMD Upgrade Project

## upgrade of physical and electronic security measures to over 250 strategic water assets across the Severn Trent region

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The Distribution Service Reservoir (DSR) Security and Emergency Measures Direction (SEMD) Upgrade Project is part of a regulatory and legislative driver imposed on Severn Trent Water regarding the protection of its infrastructure. The project involves the upgrade of physical and electronic security measures to more than 250 strategic water assets across the whole of the Severn Trent region. Typically the works involved (i) surveying and scoping sites for upgrade requirements, (ii) modification to civil structures and laying of cable ducting, (iii) replacement of non-compliant physical security products (typically access covers, kiosks, cages, doors and window bars), and (iv) Installation of electronic alarm systems.



Courtesy of NMCNomenca

The team working initiative originated from the clients AMP5 drivers requiring government compliant security upgrades within a very restricted budget. NMCNomenca recognised that following the traditional project delivery model was one of the major barriers to achieving this goal. To contextualise the size of the commercial challenge, the client advised us at the earliest stages of negotiation that a 28% efficiency over previous costs was required as an output on this project.

The prime objective was to work with STW in discharging its legislative and financial challenges. NMCNomenca developed a radical and innovative delivery model, adopting a new way of thinking throughout the supply chain. Key to this was a neutral platform for a sustainable integrated supply chain focused on a common goal.

### Leadership and team structure:

In order to provide the client with its outputs both in terms of the regulatory and legislative compliance and also the commercial requirements, NMCNomenca set about building a team involving both internal staff and suppliers and sub-contractors to form a true

'One Supply Chain'. Informal discussions with potential supply chain partners quickly developed into a collaborative, back to back KPI driven contract that ensured all members of the team had a goal to achieve.

The leadership is provided by NMCNomenca who are responsible for:

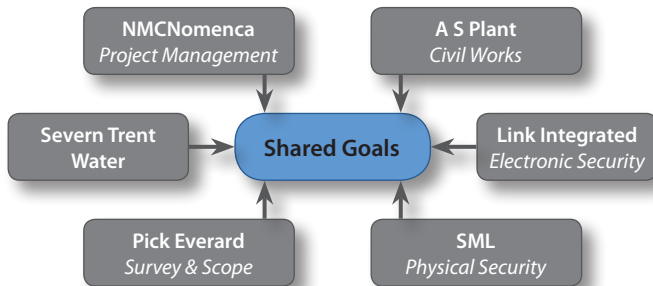
- Programme and project management.
- Safety, health, environmental and quality performance.
- Regulatory and legislative outputs.
- Customer/client satisfaction and reporting.
- Commercial outputs.
- Continual improvement.

There are then key areas which are fulfilled by members of the supply chain. These are:

- Surveying and scoping.
- Physical security design, manufacture and install.
- Electronic alarm design, supply and install.

The team has been built on a neutral platform ethos and cross company interaction and offline dialogue to drive efficiency is encouraged. The typical hierarchical team structure was deliberately abandoned and a more collaborative delivery methodology was adopted, which to date has provided various demonstrable outputs as described further on in this submission.

A diagrammatic representation of the team structure is noted below. As can be seen from this, a key to the success of the team is shared goals:



### Planning & communication

The early involvement in this project provided by the client to NMCNomenca was passed on to the supply chain to ensure that as a team, any opportunities for efficiencies were captured during the planning stage of the project.

As part of this planning, it was recognised that due to the large number of sites requiring work, a typical project programme that was used to update progress would not help support the timescale efficiency required. Instead, the project team adopted the critical chain theory and utilised existing technology to develop a project programme that provided a daily task list and subsequent progress tracker to all parties involved. The programme is an online

accessible tool where each supply chain partner is responsible for updating their own tasks. This has provided the team with a totally dynamic planning tool to help deliver the project.

As communication is a key part of ensuring the success of the project and inter-team relationships, NMCNomenca engage the supply chain by utilising their involvement in the following:

- **Co-location:** The supply chain members co-locate with NMCNomenca and the client on a weekly basis offering the best possible form of communication and interaction.
- **Communication cells:** These are bi-weekly, 30 minute meetings around a standardised display board that covers high level elements of the project such as programme, finance, health and safety performance, concerns, quality and resource.
- **Quarterly review meetings:** These meetings collate data from the previous quarter to provide feedback to the supply chain on performance and future planning topics. These forums also offer an opportunity for all parties to discuss current issues and innovations.
- **IMSOL:** NMCNomenca's Integrated Management System Online (IMSOL) is accessible by the supply chain partners and allows them to directly report their health and safety data such as positive interventions and near misses.
- **Training:** All of the supply chain partners have worked closely with NMCNomenca to ensure that the skills of the people working on the project are targeted to provide the team with a robust platform for success. The areas that have currently been covered are:

- ▲ EUSR Passport to Safety.
- ▲ EUSR Water Hygiene.
- ▲ Defects Avoidance.
- ▲ Delivering Community and Customer Excellence.



Ladybower Reservoir upper dam - Courtesy of NMCNomenca

### Resource management and motivation

It is widely recognised that KPI's and associated measures are a means to drive out performance and continual improvement. Under the AMP5 contract with the client, various KPI's and measures are commonplace. To help achieve a neutral platform and to develop shared goals and shared ownership, we worked with the supply chain to develop a set of bespoke KPI measures (using the AMP5 capital projects KPI title headings as a guideline). However, unlike the capital measures framework, the contracts with the supply chain are structured with a gain/gain mechanism to focus partners achieving success; as opposed to avoiding failure.

It is a key part of the team's performance to ensure that the right resource is in place at the right time. In terms of the physical number of resources, this is managed by the dynamic planning tool referred to earlier. However, it was an essential driver for NMCNomenca that there was minimal disruption to the team that would be caused by the potential rotation of site based resource. One of the KPI measures addresses this by requiring a less than 80% staff turnover across the whole project.

### Continual improvement

In addition to the items covered in the planning and communication section, NMCNomenca have also undertaken quality and IMS audits on all of the construction partners Link Integrated, SML (*Peter Savage Ltd, Morgan Marine, Lowrey Contractors Ltd*) and A S Plant. These audits have been conducted by our in house IMS manager to ensure process compliance as well as identifying opportunities for continual improvement.

Further, we have bespoke KPI measures which are referred to in the previous section. Two of these KPI's are directly related to continual improvement in that we require our supply chain partners to return a 5% year on year outturn cost efficiency and also demonstrate areas of outperformance against specified and agreed spend levels.

### Issue resolution

As covered in the planning and communication section, the measures put in place to aid communication such as co-location, communication cells, quarterly reviews and training allow any issues found throughout the delivery of this project to be captured at an early stage, communicated and resolutions to be put in place at the earliest possible opportunity.

The value stream within this programme is through identifying and eliminating waste in all its form which in the context of this scheme is by going to site with a single solution with all materials and resource in place known to us as a 'Full Kit Point'. It is evident that by allowing time within the programme for design and issue resolution that as a team, we can drive home the right first time mentality and reduce the amount of issues raised from site level.

### Team delivery

The integrated delivery team have been working together for the past 18 months, albeit 12 months of this was design based. As noted previously, we conduct satisfaction surveys and quarterly reviews with all team members to ensure team satisfaction and project delivery out performance.

The completion date for this programme of works is March 2015 and we are currently forecasting a completion of November 14 with a financial gain currently being projected.

We are however able to confirm that based on team delivery results to date and associated outperformance of the clients expectations, we have been awarded additional batches of works which follow the same model to the value of £3.1m.

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