

<b>BIM4Water case study template</b>		
<b>Section 1: Project Details</b>		
Project name	NWG Exemplar BIM projects (Woodham Bridge SPS and East Hartford SPS)	
Client	Northumbrian Water Group (NWG)	
Project Scope and Outcomes	Refurbish two pumping stations whilst collecting the digital information / data via the BIM process to allow the asset owners to successfully integrate this data into their asset management system.	
What are the project timescales?	Brief and Team Engagement	1 week
	Design	8 weeks
	Construction	Overall 93 weeks for both projects
	Commissioning and handover	
What is the total project budget (including fees)?	£1,146,218 (both projects)	
Type of work (new build, refurbishment, Repair & Maintenance)	Refurbishment	
Asset type	Wastewater Pumping Station	
<b>Section 2: Stakeholders</b>		
Who's involved in the project team? ( <i>where known</i> )  Indicate (F) if they were appointed via a framework.	Delivery partner(s)	Wood and Interserve
	Key supply chain partners	Xylem, Intellect, Labtec
	Other key parties	Turner and Townsend
Lead contact details	Name and designation	Mike Overy (BIM Manager)
	Organisation	Northumbrian Water Group
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<b>Section 3: BIM details</b>	
<p>Background - how long has the Client been using BIM and what is the overall progress to date?</p> <p>Can you provide an overview of the Technology arrangements to support BIM?</p>	<p>Northumbrian Water Group (NWG) have historically collected asset information / data at contract completion. This information / data has varied in both quality and quantity, therefore the use of it has not been optimised which results in the limiting of decision making and inefficiencies. The aim is to standardise the process and have a single system to manage and utilise asset data.</p> <p>As a joint venture the delivery project teams have produced a process tailored to NWG's requirements and implemented this process within the two projects. The new process will improve the asset information / data transfer at project handover, ensuring it can be effectively used to make better informed decisions during operation and maintenance lifecycles.</p> <p>Wood and Interserve were already utilising a CDE (Common Data Environment) – ProjectWise and the data was being collected via Excel so NWG and the delivery partners proved there was little need to invest heavily in software.</p> <p>The client is running SharePoint and the asset management system is IBMs Maximo.</p>
<p>What is the BIM scope for this project and is it planned to use key documents, e.g. EIR/BEP plan/AIR etc.</p>	<p>For these exemplar projects the BIM scope was to prove the collection process from the construction phase and pass it successfully to the client in a form they wanted and could easily digest into their existing systems. The main aim was to test the ability to successfully collect the data from the supply chain in a format NWG systems could easily digest.</p> <p>The client produced an OIR / AIR and an EIR for these two projects. NWG also developed and issued a contract amendment for both projects, thus ensuring the BIM documents carried a contractual weight.</p>
<p>At what stage was the decision taken to use BIM on this project and has BIM been used throughout the project lifecycle?</p>	<p>A project of short cycle duration was needed to prove this exemplar project. The two projects were selected as they are very repeatable as NWG has a significant number of wastewater pumping stations that would require refurbishment.</p> <p>Therefore the majority of the BIM process took place during the construction lifecycle.</p>
<p>How was the project team "brought on board" to use BIM?</p>	<p>NWG have set up a framework for BIM Champions so that each of the main contract framework partners have a representative. This group has worked to solve issues across commercial divides with the main goal to deliver the successful BIM project. The BIM Champions had been working with their respective organisation for months prior to these projects developing the new process. Therefore when it came to briefing the team they were generally aware of the initiative and hence very supportive.</p>

How did BIM impact on the design stage of the project? What were the benefits and to whom?	In these particular projects the impact at the design stage was minimal as we were focusing on the data collection during construction.
How did BIM impact on the construction stage of the project? What were the benefits and to whom?	<p>It was a surprise to all how little the BIM process for data collection impacted on the construction phase. The process was designed to dovetail into NWG's existing processes therefore it was not unfamiliar to the project teams and hence little impact.</p> <p>The benefits from collecting the data in a structured format and linking it to the geometrical data were immense to the client. The PDTs (Product Data Templates) and geometrical data were completed during the project lifecycle resided within the CDE. The EIR included a clause which ensured all project data / information was backed up into the clients systems once a month.</p>
How did BIM impact on the operational stage of the project? What were the benefits and to whom?	We're still on the journey but we've already come to the conclusion that the way in which the data has been collected will have immense benefits to all the departments within NWG. Having the digital data available as one single source of the truth within the asset management system is the foundation for good asset management.
What were the estimated costs of utilising BIM on this project?	The costs have been minimal due to the integration of the BIM requirements within the existing processes.
What were the estimated savings from the use of BIM?	NWG are aiming for an overall efficiency of 1% of the capital delivery budget with the use of BIM. However this saving will be dwarfed by the potential saving from the operational and maintenance of the asset over their lifecycle due to having the right data in the right place. There will also be a significant saving due to having the right information / data when the assets are re-visited for further capital work.
Any other information	The BIM process is simple and straightforward to apply. The ISO19650 standard is the guideline and making it fit your organisation is the key rather than the other way around.
<b>Section 4: Overall Assessment</b>	
Was the use of BIM appropriate?	Yes and it adds clarity for the supply chain as the client needs to take the lead in detailing their requirements.
Are there clear benefits (both quantitative and qualitative) by applying BIM to this project?	For the project team the question moved from "why BIM" to "why would you not use BIM". BIM builds the foundation for managing the assets and presents the information / data in a way which has clear quantitative and qualitative benefits for the client.
What are the key challenges in using BIM on this project and how were they overcome?	The key challenges during the project stages are getting everyone to understand that the data is just as valuable as the physical asset. There are more challenges within NWG to change this perception during the operational and maintenance lifecycles.
What could be learnt from using BIM on this project and applied elsewhere?	The client needs to understand what data / information they required to operate their business and communicated to the supply chain how they need it supplied to them so it can be easily digested.

Has all appropriate changes or new asset data been transfer to Asset Management been completed?	The journey is still ongoing for NWG. The production of PDTs is one of the main keys to the collection of data and NWG are maturing the process to develop them with our supply chain partners.
Client testimony (where possible)	This is the best testimony possible as they've got the client writing the case study. The team have done a fantastic job and all the partners (Wood / Interserve / Esh / Stantec / Mott MacDonald Bentley / Integrated Water Services) have helped each other in a truly collaborative way.
What is the potential for rolling out any of the above benefits/lesson learnt etc across the water industry wide?	Happy to discuss our approach with anyone who believes we could offer help.
<b>Section 5: Case Study Administration section</b>	
Author and date completed	Mike Overy
Has a case study template been completed by this project before?	No
Version Control	Version 2.1, 30/10/18