Case study: Collaboration

Background

The Strategic Employment Site (SES) is located near J21, M1. This development brings new jobs to the area and incorporates a new village and amenities. With the creation of the new junction for access from Leicester Lane, the assessment concluded that the B4114 / Leicester Lane junction also needed improving to allow for greater capacity.

Local consultations highlighted concerns with works creating a potential disruption to the local conservation village and retail park.

It was also identified that key public services would also be affected by the works including:

- Leicestershire police headquarters (PHQ) site at the B4114 junction
- Enderby park and ride
- Fosse Park (retail park)
- Local bus service to Enderby
- Farmer's premises, whose access was immediately adjacent to the site
- Local commuters

The works started in September 2016 and completed in May 2017, incorporating the Christmas embargo.

Objectives

To carry out these works effectively, by ensuring:

- all team members had the right skills and experience to deliver the scheme
- public services continued to run effectively
- complete the works on time and clear the network of disruption

Our overall goal, of delivering an effective scheme within the constraints of this particular site, placed as much emphasis on consultation and team working as design innovation and solving engineering challenges.

Project:
The Strategic Employment Site (SES), Lubbesthorpe, Leicestershire

Client:
Leicestershire County Council (LCC)

Design consultant: **Leicestershire County Council, AECOM Waterman (PSP2)**

Contractor: **Eurovia**

Contract value: **£5 million**

Length of project: **9 months**

Completion date: **May 2017**

ECI

The Principal Contractor, Eurovia, was selected from the Medium Schemes Framework (MSF2) on a call-off, which allowed an advanced ECI of 9 months. This provided cost savings from initial draft designs of £391,110 (12.7% of target).

Due to the importance of maintaining traffic flows, the Traffic Management contractor was commissioned 8 months prior to site works. They were included in ECI meetings to provide input and prepare for all phases – updates of proposals were communicated to all public services affected and they were invited to give their input.

Community Engagement

Statutory providers were notified early and updated continually throughout the design. Site walk-throughs were carried out to discuss programme and sharing work elements, to enable efficient delivery within the programme.

After 9 months of continued communication, and valuable liaisons from the public liaison officer, starting on site came with no issues from the locals, affected public services or the police force… all were prepared.

A good relationship was developed with the local farmer by keeping them informed of water switch off periods, alongside help with additional water supplies for their cattle to minimise any disruption.

From the creation of jobs and safe routes to work to the replanting of trees and the protection of bronze-age fields, the project has demonstrated how collaborative working can contribute towards long-term sustainability.

Key achievements

The B4114 is the busiest road in Leicestershire and part of LCC's resilience network. It was recognised that standard temporary signals wouldn't suffice at this location, so a hardwired system was identified. This allowed for the junction to operate efficiently, incorporating the 'hurry-call' for the Police HQ and enabled the traffic information to be sent to the area traffic control office.

Exceptional collaboration between all parties was essential for the complex switch-over to these temporary signals. Due to unfamiliarity of the technical elements, it was evident that great trust was put in each party to deliver their specialism. Traffic was assessed to establish the correct time of day on the lead up to the switch over, which was carried out without any issues and greatly appreciated by all parties concerned.

A water main identified on a ground penetrating radar survey was not on the provider's plans. This created a delay to a water mains diversion and became a risk to the programme. The client, contractor and subcontractor carried out meetings with the utility provider, and their operatives, to facilitate their diversions and assist with sharing the work within the programme.

A flooding issue was identified on Leicester Lane. Surface water discharge from the M1 and fields was too great for the existing infrastructure and periodically flooded the highway. This caused road closures and huge amounts of traffic being diverted. Although outside the scope of the project, it was an opportunity to find an effective way to alleviate some, or all, of this flood water. Local stakeholders were eager to see if this re-occurring flooding could be eradicated.

"Relationships were built through months of team working - information, opinions, ideas and questions were communicated at all levels and no-one was afraid to voice their opinions, which gave a sense of the scheme working almost organically."

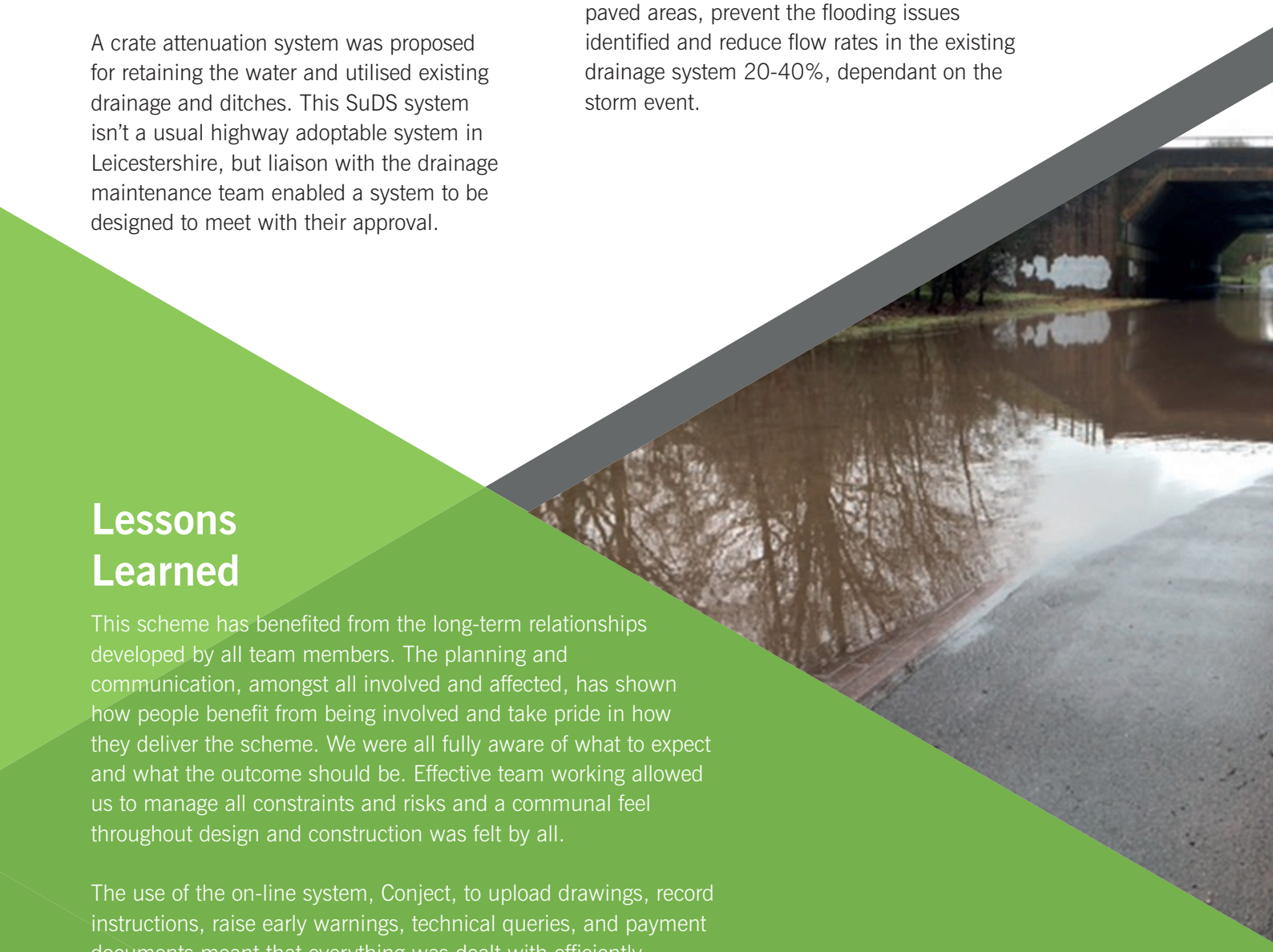
Innovation
Throughout the project there was a sense of excitement when something had to be reviewed and a solution created. Ideas to keep construction moving were often ideas that couldn't come from a book, this encouraged trust in people's thoughts and suggestions and was extremely effective and successful.

To tackle the flooding issue the onsite drainage was designed to slow down the surface water run-off heading down-stream using the Sustainable Drainage (SuDS) principles of source control and infiltration. A cascaded attenuation system was designed, which allowed for additional surface water storage within the chambers.

A crate attenuation system was proposed for retaining the water and utilised existing drainage and ditches. This SuDS system isn't a usual highway adoptable system in Leicestershire, but liaison with the drainage maintenance team enabled a system to be designed to meet with their approval.

The supplier created a system to be effective in its surroundings and allow safe access for monitoring and maintenance. This will enable LCC to determine if this could be an adoptable highway drainage solution in the future. Meetings between the contractor, designer and manufacturer continued during construction to monitor the installation process. This allowed changes to the next elements to be manufactured; such as suggestions made by the contractor for easier installation. The manufacturer has updated the standard product warranty in line with LCC's requirements.

The system has been shown to deal with surface water runoff from all additional hard paved areas, prevent the flooding issues identified and reduce flow rates in the existing drainage system 20-40%, dependant on the storm event.



Lessons Learned

This scheme has benefited from the long-term relationships developed by all team members. The planning and communication, amongst all involved and affected, has shown how people benefit from being involved and take pride in how they deliver the scheme. We were all fully aware of what to expect and what the outcome should be. Effective team working allowed us to manage all constraints and risks and a communal feel throughout design and construction was felt by all.

The use of the on-line system, Conject, to upload drawings, record instructions, raise early warnings, technical queries, and payment documents meant that everything was dealt with efficiently.