



# Future proofing streetworks

## Byng Street

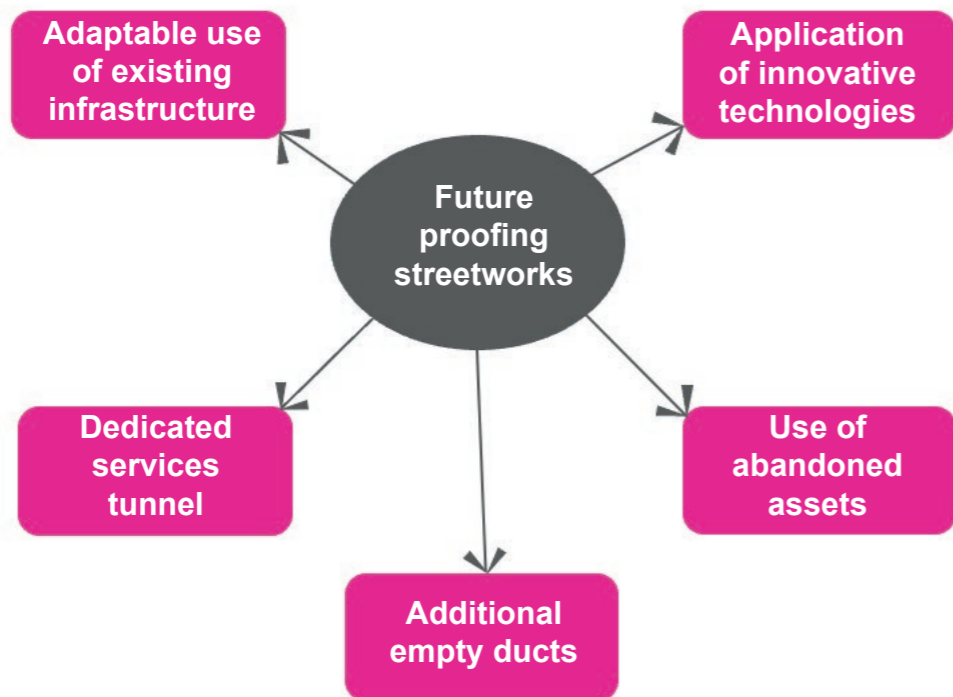
case study

# Overview

For the past 18 months, the GLA's Infrastructure Coordination Service (ICS) has been working alongside the London Borough of Tower Hamlets to develop a future proofing pilot project. The purpose of the pilot is to test policy implications and to better understand requirements of successful future proofing interventions, so that we can establish best practice for boroughs around funding and delivering future proofing.

Prior to the project, the GLA commissioned a future proofing streetworks research study which included best practice international case studies, stakeholder interviews, funding mechanisms and recommendations. During this research, it became clear that the most effective way to deliver a future proofing project was to target existing streetworks collaborations and utilise existing planned works as an opportunity to reduce costs and minimise disruption.

Future proofing streetworks means planning and developing ways to meet future infrastructure demand in our streets. Primarily, through appropriate and scalable technological interventions. Future proofing also aims to minimise future excavations on the road network to achieve its associated environmental, social and cost saving benefits.



## Collaborative future proofing benefits

Future proofing can take many forms, but for this pilot, we were looking for an opportunity to add additional empty ducting alongside an existing streetworks project. The benefits of this future proofing typology are:

- ✓ **Reduced disruption**  
Installing future proofing works alongside a planned streetworks project takes advantage of an existing disruptive activity to enable future disruption avoidance for local residents and businesses.
- ✓ **Excavation efficiencies**  
Cost and material impact saving of digging one slightly larger trench as a collaborative activity instead of two separate trenches.
- ✓ **Process efficiencies**  
Cost saving arising from having one site set up, traffic management and communication strategy.
- ✓ **Revenue generation**  
In future, there is potential for Boroughs to receive payments in return for the leasing or adoption of the future proofing ducting.



A previous TfL future proofing at Baylis Road, London

# Location selection

The efforts to identify and develop this pilot project have been focused on the Isle of Dogs area in Tower Hamlets, which is a high growth area for the borough that experiences most disruption due to developments and associated streetworks.

When installing empty ducting for future use by others, it is essential that the ducts are installed in a strategic high growth location to ensure future adoption. Power requirements for upcoming development connections was selected as the key use case for the future proofing ducting, although the duct specification would work for a telecoms future use case also.

To find a suitable streetworks project to collaborate with, Tower Hamlets and the GLA's ICS team carefully monitored all permit applications in the Isle of Dogs. Applicants were contacted directly if their project seemed suitable and a number of site visits were carried out. Also, utilities were directly contacted through the ICS sponsor group, and local developers were engaged through the established Tower Hamlets construction forum.

Sufficient time is required ahead of the works starting on site in order to plan the collaborative future proofing aspects of the project. Projects that were a short duration or a few weeks from commencing on site were not considered.

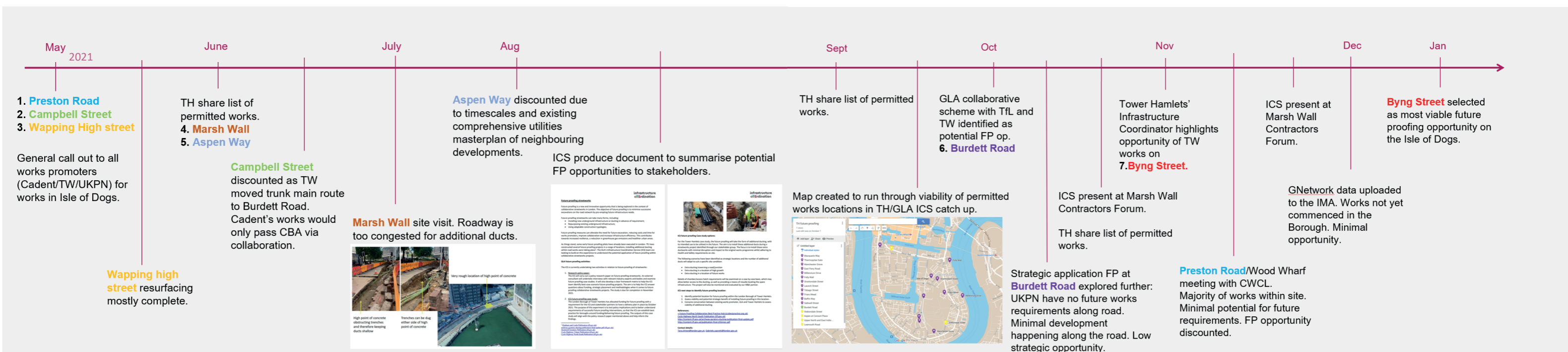
## Shortlisting exercise

A process to review the strategic nature and cost benefit of different locations. Importantly to maximise the cost benefit, the future proofing ducting required an open trench to install the ducting, so the construction methodology of planned streetworks was also considered. It took almost 12 months to locate the right streetworks project on the Isle of Dogs.

The Byng Street project is a successful example of how utility companies and Highway Authorities can collaborate to future proof strategic locations in high-growth areas. This collaborative streetwork project has demonstrated the benefits of innovative and forward-thinking infrastructure delivery, which is helping to drive forward a dig-once approach, reducing disruption to local residents, businesses and the environment.

Infrastructure Coordination Team, GLA

# Opportunity generation timeline



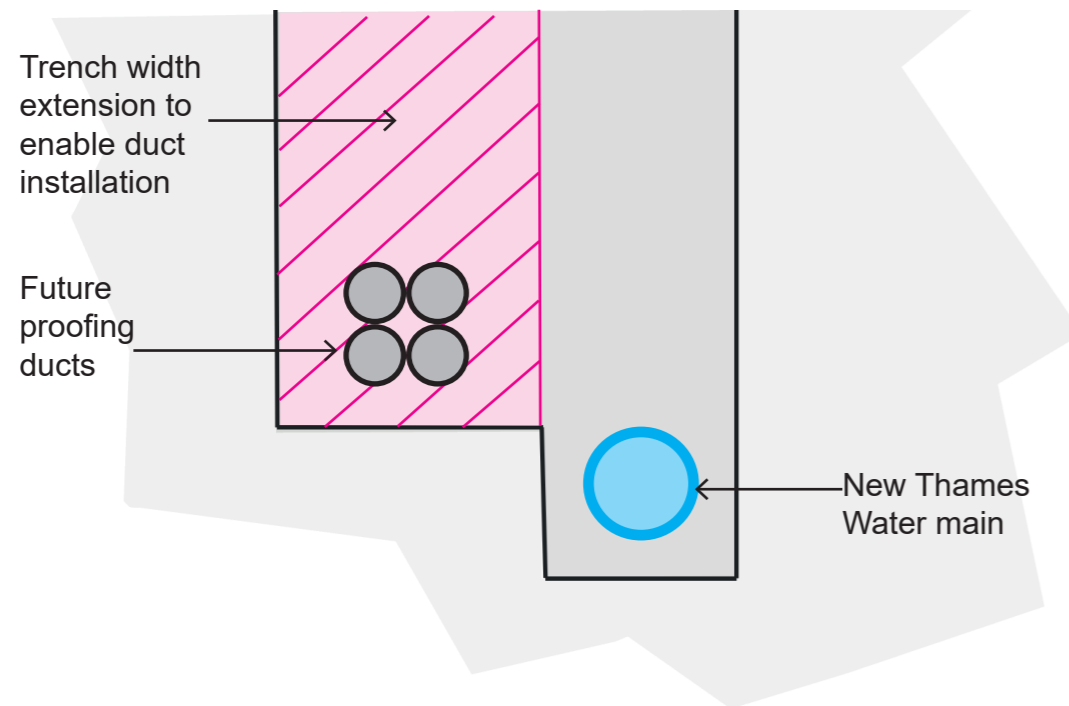
## Byng Street

Byng Street was identified by the borough as a great opportunity, being a strategic location for future use of additional ducting due to amount of upcoming development close-by. Thames Water had planned streetworks on Byng Street following a customer connection request and network reinforcement requirements in the area. Using this timely collaborative opportunity, the team began to focus our efforts on Byng Street.

The future proofing aspects of Byng Street consists of 2xHV and 2xLV empty ducts that could potentially serve as the power connections for two new developments. The ducts met the standard UKPN specifications, ensuring that future DNO or IDNO users feel comfortable adopting the assets. No connection chambers were constructed, but the site teams ensured space was available at the ducting end points for future connections.

Thames Water were installing their new main via open cut trenching, so the most efficient collaborative methodology was established early-on as widening the trench to fit the future proofing ducts.

### Trench cross section



“UK Power Networks were happy to support this project to ensure the most appropriate cable duct route was installed to assist in any future supply connections. Discussions took place highlighting the logistics for cable installation to give the best opportunity for the future use of the ducts.”

**Richard Boissieux, Streetworks Network Operations Manager, UK Power Networks**



# Project timeline overview

**Scheme selection**

## **Project selection**

Byng Street was selected after a shortlisting exercise.

## **Collaborative group set up**

Thames Water are engaged and willing to participate in the innovative project as the primary works promoter.

## **Project management**

Weekly half hour meetings were set up with Tower Hamlets (Highways and Infrastructure Planning teams), Thames Water and the GLA collaborative streetworks team.

## **Collaboration planning**

Project phasing, construction methods, key dates, CDM and permitting were all discussed and agreed as a collaborative group in advance of the works starting on site.

## **Expert review**

UKPN provided their technical input advising on the future proofing ducting specification and location to ensure future adoption.

## **Adoption plan**

Outlining the plan for future adoption of ducts with Tower Hamlets highways team.

## **Communication**

Resident engagement, shared letter drops and shared site signage were outlined prior to the future proofing starting on site.

**Start on site**

## **Site monitoring**

Continued regular weekly catch ups to address any site issues arising.

## **Site visits**

Scheduling site visits to meet the contractors and record information during construction.

**Project completion**

## **Wrap-up**

A project wrap up including an opportunity to share any lessons learned with the wider team.

## **Permit monitoring**

During the planning and site phases of the project, Tower Hamlets Highways team closely monitored any permit applications for Byng Street. By doing this, the team managed to safely incorporate short duration works from UKPN, Cadent, Virgin Media and EPS; adding to the overall disruption saving to local business and residents.

## **Adoption plan**

From the outset of the project the adoption plan was defined. The future users of the ducting will fully adopt the ducting from Tower Hamlets Highways team. In this case, the future user can use the ducting free of charge and assume any responsibilities of any potential repairs should they be required. During the site phases of the project, information was recorded as an information pack. Local developers were engaged directly and the Tower Hamlets Highways team will notify any future permit applicants on Byng Street about the presence of the ducts.

“Our liaison with local developers and knowledge of the area allowed us select this critical location where several development plots are located along highways with considerable below ground congestion. Furthermore the blockwork finish along the selected stretch of road takes longer to lift and re-instate than a more typical tarmac course as well as requiring the replacement of numerous broken blocks. All of these aspects increase the duration, cost, local and environmental impact saved by installing the future proofing ducts and avoiding further excavation along this length of road.”

**Dorothee Woollard, Infrastructure Coordinator, Tower Hamlets**

“We are so pleased to be able to have been involved in alleviating such a significant amount of disruption from such a difficult location for years to come. It is paramount that the industry start to think broader on how they deliver their works, and what opportunities could be included to ensure the resilience and feel of our cities and towns remain.”

**Thomas Chambers, Collaboration Specialist, Thames Water**

## Procurement & cost sharing

In the original procurement plan, Thames Water were going to instruct their contractors to extend their trench width and install the future proofing ducts. To enable this extension of scope, Thames Water were going to invoice Tower Hamlets for the additional cost.

It was later discovered that Thames Water could not extend the scope of works due to their regulatory business controls. Tower Hamlets then appointed their term contractor to install the future proofing ducting. As the project now had two contractors on board, careful planning around CDM, phasing and costing was required.

It was agreed that Thames Water's contractors would excavate a larger trench and cost balance this additional excavation if the Tower Hamlets contractor backfilled the full trench width. Once we had this agreed methodology in place, the teams felt comfortable to commence works on site.





## Recommendations

- **Mapping of strategic areas**

If areas or streets are highlighted as useful future proofing locations, they can be mapped and shared with Highways teams. When utility works permits are raised at these locations, the works can be reviewed as potential collaborative future proofing projects.

- **Revenue generation**

Installing future proofing as a collaborative project is more cost effective than as a standalone project. Further studies could be carried out to gain a better understanding of these savings and potential revenue generation opportunities if the ducts were sold or leased by Highways Authorities to future users.

- **Governance and support**

For Highways Authorities planning to undertake future proofing projects, internal governance and support functions need to be in place prior to the commencement of a project. Project 'buy-in' should be achieved at a high level within the Borough to secure engagement across relevant teams and the appointment of a single point of contact. This will improve project supervision across internal teams and minimise/avoid blockages.

## Lessons learned

- **Technical skills**

On this project we were fortunate to have the support of UKPN for any technical queries on duct installation or material specification. This technical input was essential to ensure the ducts were suitable for future adopt-ability. Scaling up innovative future proofing projects requires allocated technical resource, from feasibility to on-site project stages.

- **Early investigations**

The carriageway was heavily congested at the location of the future proofing duct installation locations. Additional early investigations would have helped to identify these obstructions prior to starting on site, which led to delays.

- **Contractor appointment**

For Byng Street, a cost sharing exercise was completed prior to commencement on site. Another idea to enable contractor appointment, is the main contractor digs the trench and the other contractors install the future proofing ducting as a "lay-only" activity. Contractors should have rates already assigned for activities such as this.

- **Future proofing records**

Location of the future proofing assets should be recorded so that future users of the duct have the information they require. This information could be captured as asbuilt drawings and considered as part of the Contractor's scope.

