



Cowley pedestrian and cycle bridge

Summary report
Date: September 2024




Project location

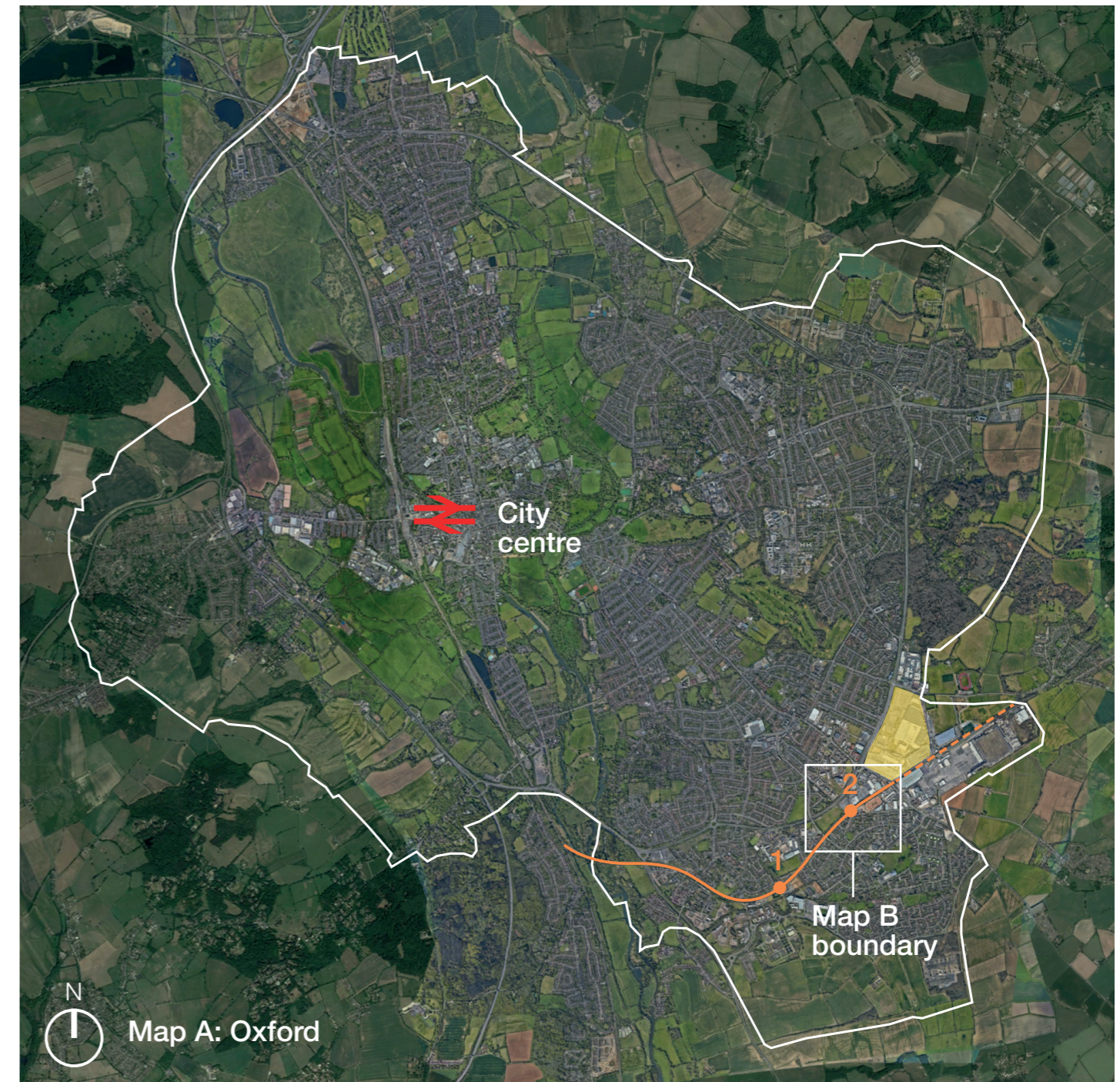
Oxford City Council (OCC) has appointed a consultant team to undertake feasibility and design work for a new public bridge for walking, wheeling and cycling over the railway line. The bridge will provide connectivity between Blackbird Leys to the south of the Cowley Branch Line and the communities and facilities to the north of the line, including Tesco supermarket, ARC Oxford (via the Ambassador Avenue underpass), and the station platform of the proposed Oxford Cowley station.

The Cowley Branch Line is an existing railway line currently only used by freight travelling to and from the BMW Mini Plant. It is proposed to re-open the line to passenger services with two new passenger stations. One of these proposed new stations, Oxford Cowley, is adjacent to the site of the foot and cycle bridge that is the focus of this report.

This document forms an overview of the design work that has been undertaken on the bridge so far. The process started out as an information gathering exercise, in which studies were made of the site, the technical requirements for the bridge and aspirations for the bridge from a wide range of key stakeholders. All this feedback has fundamentally informed the design of the bridge that is presented in the last few pages of this summary document.

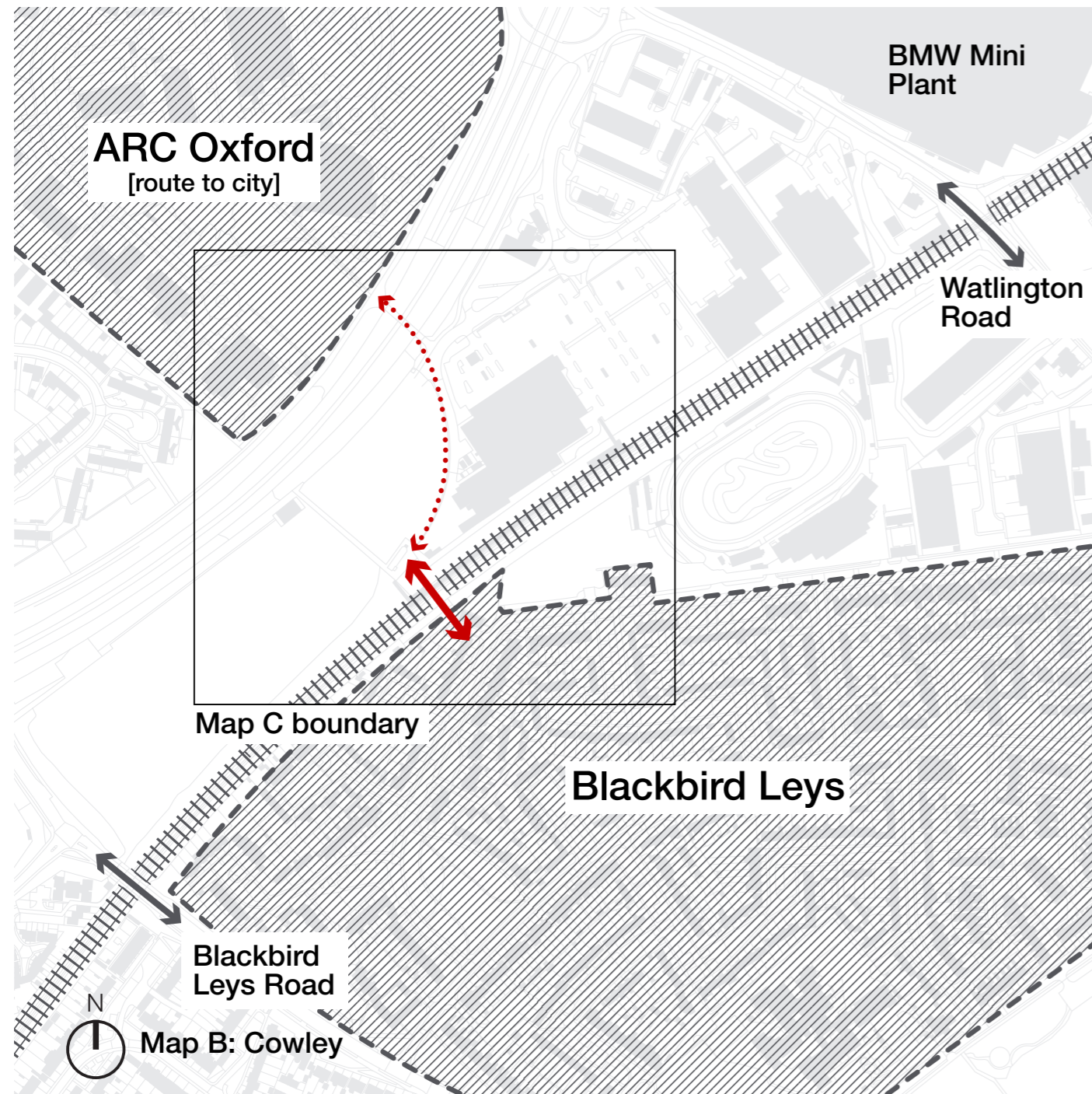
The map to the right highlights the location of the new foot and cycle bridge in the south east corner of Oxford.

-  Cowley Branch Line
-  1 Proposed Oxford Littlemore station
-  2 Proposed Oxford Cowley station
-  BMW Mini Plant

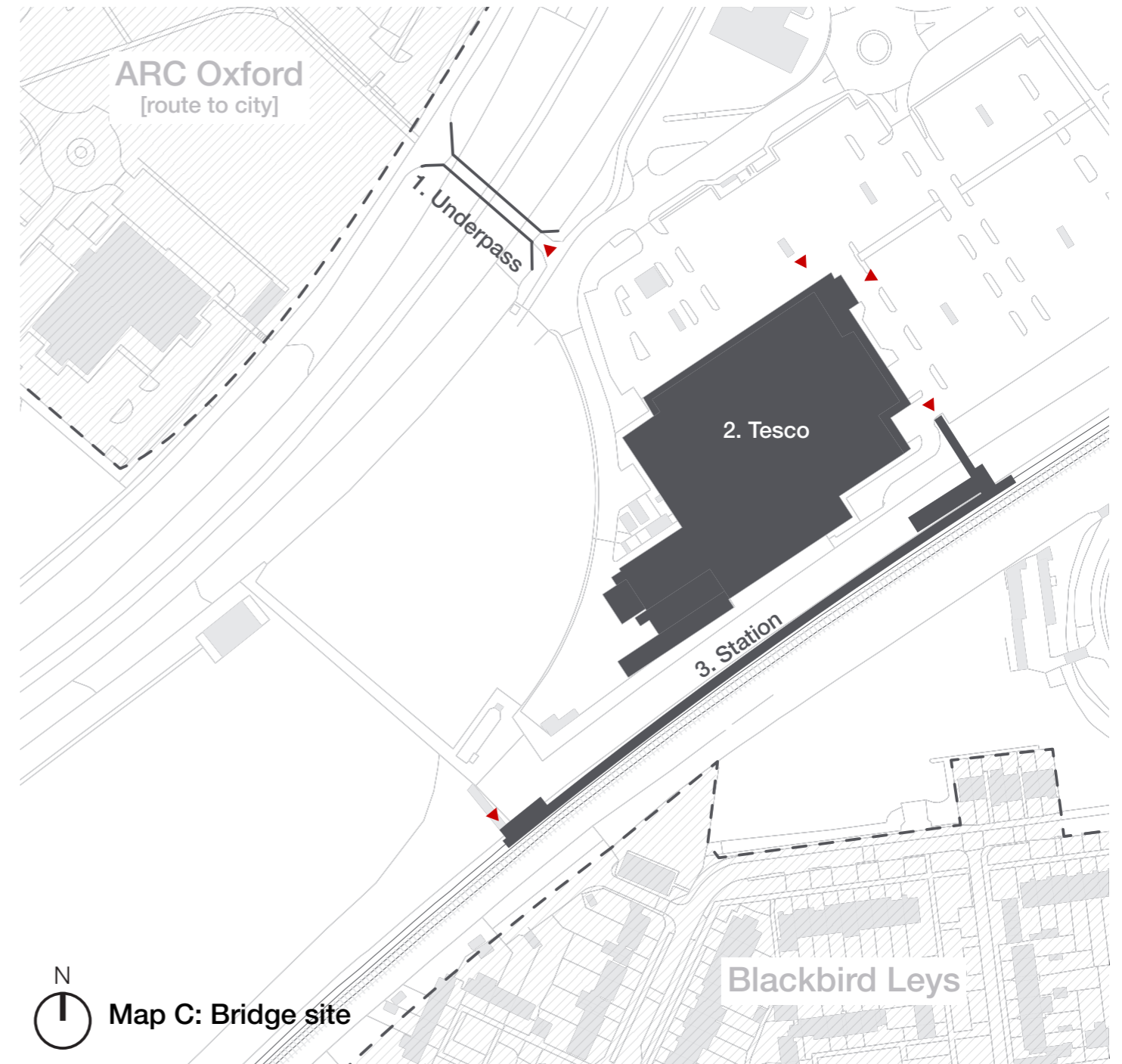


Site area

A new crossing point will greatly improve connectivity over the Cowley Branch railway line, particularly for residents of Blackbird Leys. The new bridge will sit between the existing crossing points of Watlington Road to the north east and Blackbird Leys Road to the south west (both busy car traffic roads).



The new bridge must provide easy and logical access to a number of key sites to the north of the railway line. The existing Ambassador Avenue underpass (1) provides access under the eastern bypass. Access to Tesco (2) is at the north eastern edge of the building. (3) A new station platform (Oxford Cowley) is proposed to the south of Tesco that will have two access points at the north eastern and south western ends.

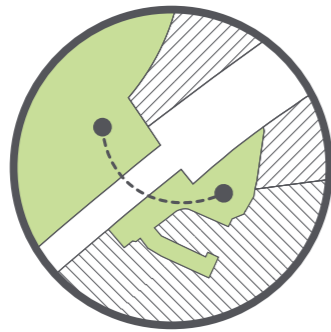


Key design opportunities and constraints

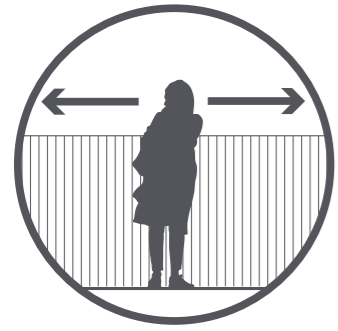
Early stakeholder engagement within the project helped to identify the following key aspirations, considerations and constraints for the design of the bridge.



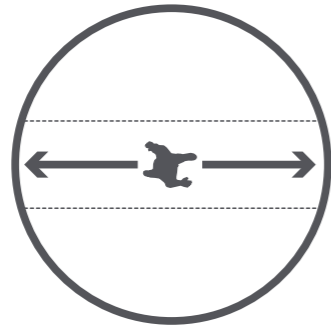
Align to onward travel routes



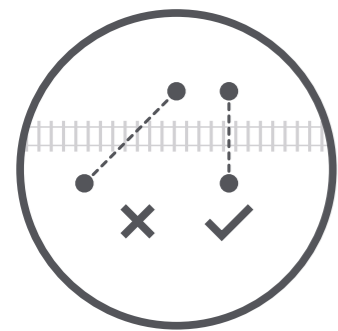
Deliverable within Oxford City Council/ Network Rail land



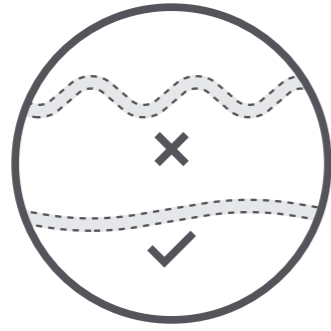
Intuitive journeys



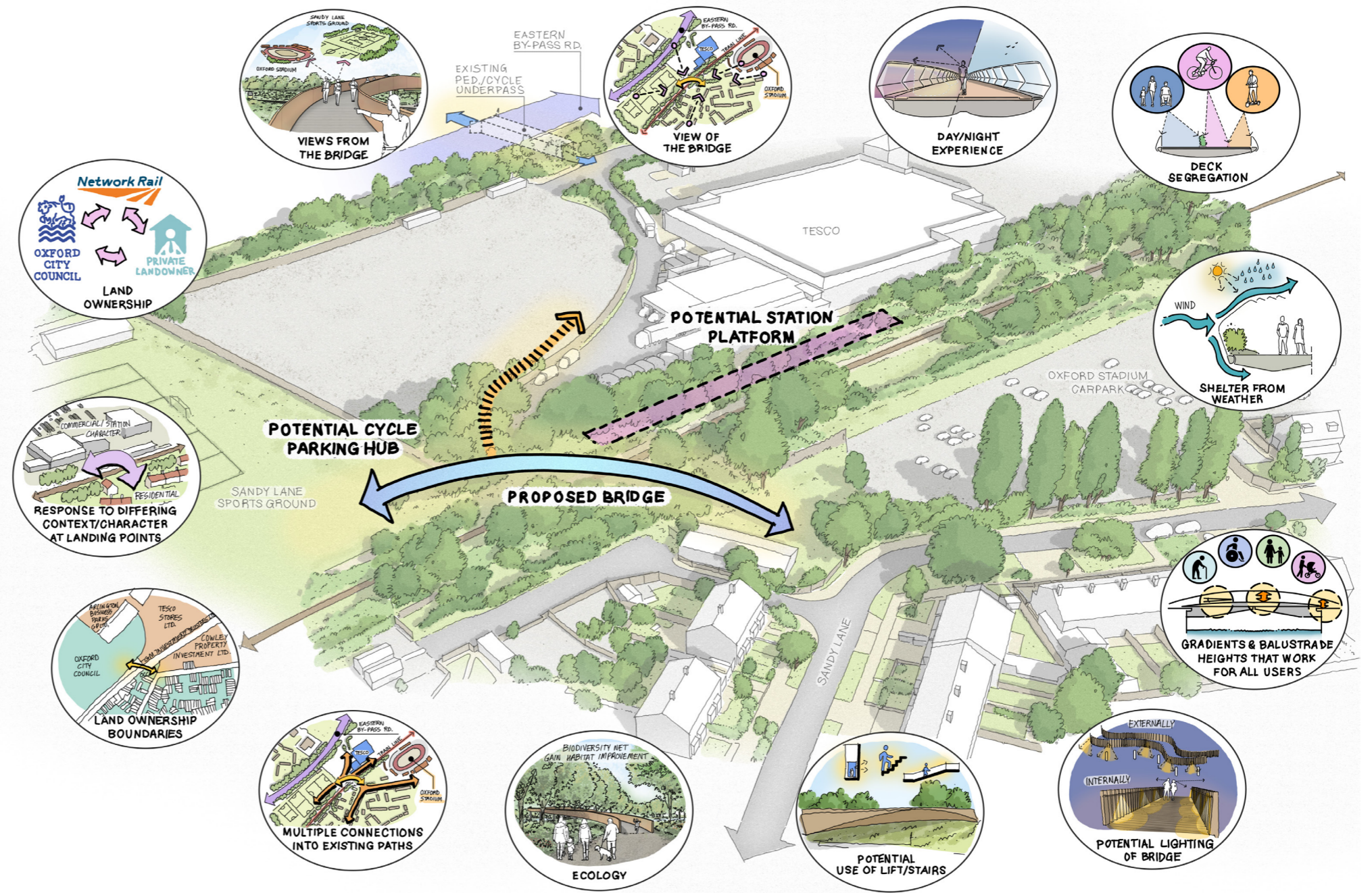
Minimise length of user journeys



Minimise span over railway



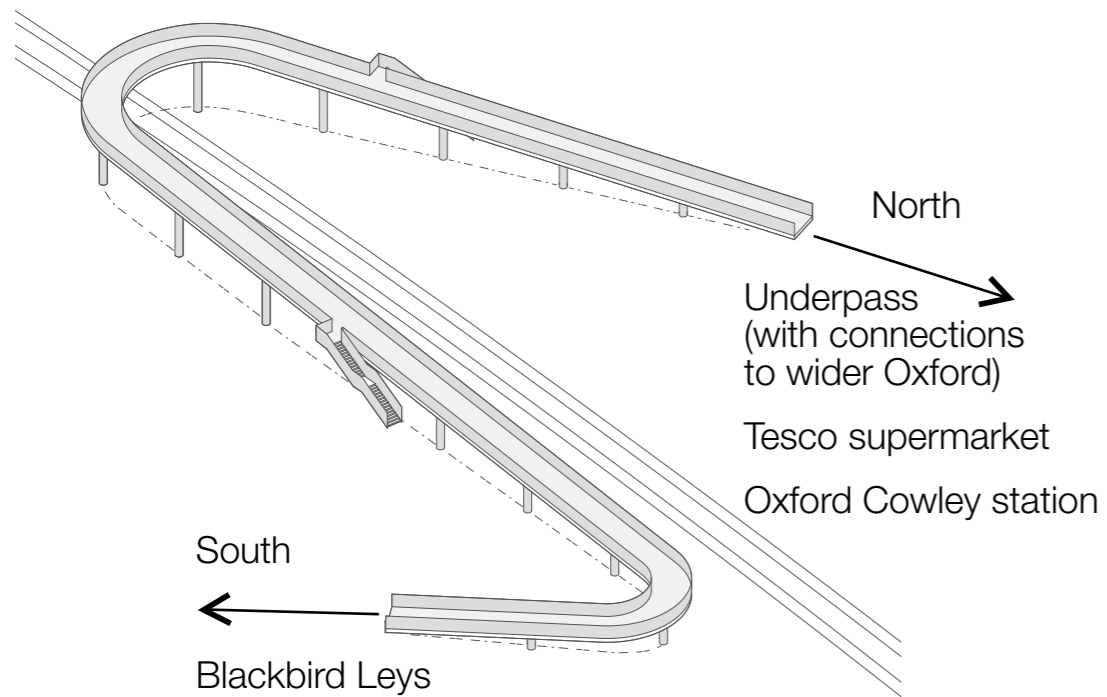
Smooth route for cyclists



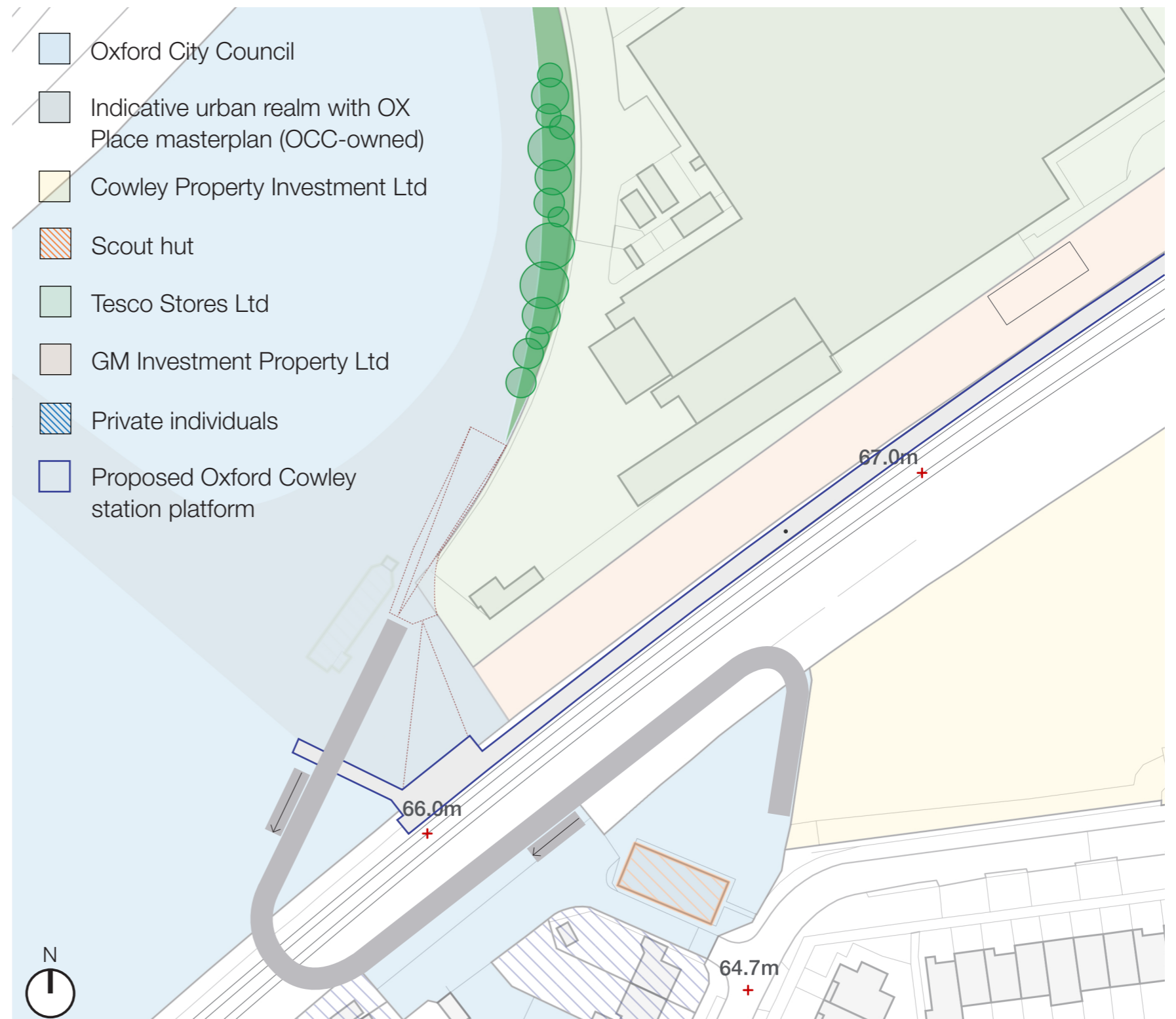
Design: bridge alignment

The design proposal for the bridge is a gently curving structure that sits elegantly within its site and prioritises wider connections.

The gradient of the bridge ramps must be very shallow (1 in 22) in order to be accessible for wheelchair users. As such the length of the bridge is extensive both to the north and south of the railway line. But the chosen configuration affords quick and intuitive access to all the key amenities around the site. Changes of direction are minimised with large turning circles to improve the user experience for cyclists.



Isometric view of the bridge over the railway line



Plan view of bridge showing the land ownership boundaries of the site

Design: bridge look and feel

The proposed design comprises an elegant steel parapet composed of vertical fins, along the whole length of the bridge crossing and the ramps on either side.

A sealed concrete deck is proposed, with a pair of block-laminated timber girders (glulam) sheltered underneath providing the primary structure. This modern form of construction reinvents the traditional wooden bridge with a focus on longevity and low-maintenance. While the timber-concrete composite system has become increasingly popular in other Northern European countries in recent decades, this exciting and contextually appropriate design response represents a first-of-a-kind application in the UK.

The timber deck has been designed to maximise the design life of the bridge with inspection and maintenance requirements no more onerous or costly than with more conventional steel bridges. In support of the city's Zero Carbon Oxford action plan, the adoption of a timber deck will minimise the embodied carbon of the bridge design.

A series of 'V' shaped columns are proposed which fix into the twin timber girders on the underside of the deck.



Aerial view of bridge looking north



Ground level view of curved bridge crossing looking east

Design: element composition

A series of physical models have been developed as part of the design process to test how the different elements that make up the bridge can be amalgamated into a beautiful and practical design solution.

The photographs on this page are of a sectional model of the bridge at the point it crosses the railway line. This model explores how the design of the parapet, composite deck and columns combine to create a structurally efficient and elegant design that meets all necessary health and safety requirements.

