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Table 1: Crossrail Water Consumption Data

Contract	Construction Type	Scope of Works	Dimensions	Contract Value Target at Award (£ million)	Duration of data recorded (approx.) <sup>1</sup>	Water Use (m <sup>3</sup> )
C300/C410 - Crossrail Running Tunnels - West; Bond Street & Tottenham Court Road Stations - Early Access Shafts & SCL Works (JV: BAM Nuttall Ltd / Ferrovial Agroman (UK) Ltd / Kier Construction Ltd)	Tunnelling	The C300/C410 works involve the construction of the western portion of the Crossrail eastbound and westbound running tunnels, including station platforms and cross passages, between Royal Oak Portal near Paddington Station through to the eastern end of the new station at Farringdon, referred to as Drive "X" and totalling 6.5km of twin bore tunnel.	6.5km of twin bore tunnels	450-500	4 years, 2 months (54 Rail Periods <sup>2</sup> )	364,361
C305 Eastern Running Tunnels (JV: Dragados S.A. / John Sisk & Son (Holdings) Ltd)	Tunnelling	Contract 305 comprises the eastern section of the Crossrail running tunnel drives between Victoria Dock Portal via Stepney Green Shaft to the eastern end of Farringdon Station (Drives Y and G) and from Stepney Green Shaft to Pudding Mill Land Portal (Drive Z). Approximately 11.95 km of twin bored tunnels are to be constructed by Tunnel Boring Machines, with cross-passages constructed by hand	24 km of tunnels and cross passages	450-500	5 years, 3 months (68 Rail Periods)	833,926

C310 Thames Tunnel (JV: Hochtief / J Murphy & Sons Ltd)	Tunnelling	The C310 Crossrail Thames Tunnel contract used a mix shield or “slurry” method of tunnelling chalk to carve out twin tunnels of 2.8km from Plumstead to North Woolwich. This method comprised of a sealed, pressurised, air-locked chamber behind the cutter head where the excavated spoil is mixed with bentonite (a mixture of clay and water) to form a liquid. The liquid is then removed through a system of pipework. This method was chosen because of the tidal effect of the River Thames, soft chalk geology and high groundwater level	6 km of tunnels	150-200	3 years, 7 months (47 Rail Periods)	405,168
C315 Connaught Tunnel Refurbishment & Fit Out (VINCI Construction UK Ltd)	Civils	Connaught Tunnel situated between Custom House and North Woolwich was a Victorian brick lined structure, which was renovated as part of the Crossrail works by C315 (VINCI Construction UK Ltd). The renovations and modifications included removal of existing tracks, lowering the concrete inverts to accommodate the new Crossrail trains and overhead line equipment and create cast steel lined tunnels with a single twin-track concrete box to replace twin single track brick lined tunnels.	Extracted Information not available	30-35	3 years, 1 month (40 Rail Periods)	4,604
C340 – Royal Victoria Dock Portal (VINCI Construction UK Ltd)	Civils - Portal	C340 involves the construction of the portal at Victoria Dock. The completed structure will form a sloping gradient for the new trains to transition between deep driven tunnels and ground level at the new Custom House Station. The portal also includes an intervention point from track to street level as well as a facility for Mechanical and Electrical Equipment and drainage sump with pumps.	Extracted Information not available	25-30	3 years, 10 months (50 Rail Periods)	5,538

350 Pudding Mill Lane Portal (Morgan Sindall (Infrastructure) Plc)	Civils – Portal	<p>The C350 project comprises the construction of a tunnel portal and a new elevated Docklands Light Railway station at Pudding Mill Lane, plus associated structures to bring the subterranean railway into the above ground existing rail network. The project will also link new Crossrail tunnels to the existing Network Rail infrastructure.</p> <p>Associated works include a reinforced earthwork embankment, six span viaducts and a number of other bridge structures, to realign the track and link to the existing railway.</p> <p>The project scope also includes full mechanical and electrical work for the station works, all track and rail systems, plus highways and hard landscaping works.</p>	Surface Area Approx. 38,877 m <sup>2</sup>	45-50	5 years, 9 months (75 Rail periods)	13,143
C360 - Eleanor St & Mile End Shafts (JV: Costain Ltd / Skanska Construction UK Ltd)	Shafts	C360 comprised of the Crossrail intermediate shafts and headhouses at Mile End Park and Eleanor Street (including all associated enabling works), and the construction of the headhouses at Stepney Green, Limmo Peninsula and Fisher Street. These shafts are to provide intervention access to the Crossrail tunnels and in some cases to accommodate tunnel ventilation fans.	Extracted Information not available	35-40	4 years, 6 months (59 Rail Periods)*	26,016
C405 Paddington Station Advanced Piling & Main Works (JV: Costain Limited / Skanska Construction UK Limited)	Station (cut-and-cover box by top down construction)	The C405 Paddington Station Main Works contract consists of a new station box construction using a cut and cover method at the southern side of the existing Paddington Network Rail Station.	260m long, 25m wide and 23m deep	100-150	5 years, 3 months (68 Rail Periods)*	41,472

C412 - Bond Street Main Station Works (JV: Costain Limited / Skanska Construction UK Limited)	Station (mined tunnels using Sprayed Concrete Lining (SCL) construction techniques	The project comprises of the construction of 2 no. 35m deep station boxes (250metres apart), using diaphragm walling and secant piling, followed by top-down methodology for the excavation and floor construction. The project also includes the complete design and installation of all M&E equipment, architectural finishing's, lifts & escalators, and integration with the existing London Underground station and Crossrail's Systemwide contracts through the connecting tunnels.	2 x 35m deep station boxes	100-150	3 years, 5 months (44 Rail Periods)*	6,275
C422 - Tottenham Court Road Main Station Works (Laing O'Rourke Construction Ltd)	Station (mined tunnels using Sprayed Concrete Lining (SCL) construction techniques	The Tottenham Court Road station will comprise of a tunnelled station with east and west bound platform tunnels running directly below Soho Square. Access to the station will either be from the Western Ticket Hall located on Oxford Street or from the Goslett Yard Eastern Entrance both of which accommodate escalators to serve the concourse areas and passageways which lead directly to the running platforms.	Extracted information not available	85-90	2 years, 11 months (38 Rail Periods)*	4,208
C435 Farringdon Station Main Works (JV: BAM Nuttall Ltd / Ferrovial Agroman (UK) Ltd / Kier Construction Ltd)	Station (mined tunnels using Sprayed Concrete Lining (SCL) construction techniques comprising 3 shafts at Western Ticket Hall and 1 shaft at Eastern ticket Hall)	C435 Farringdon Western Ticket Hall was constructed using a bottom up technique and Farringdon Eastern Ticket Hall was constructed using top down technique.	Western Ticket Hall is 65m by 48m Eastern Ticket Hall is 70m by 32m	200-250	2 years, 5 months (32 Rail Periods)*	17,813

C502 Liverpool Street Station Main Works (Laing O'Rourke Construction Ltd)	Station (mined tunnels using Sprayed Concrete Lining (SCL) construction techniques	The Liverpool Street Station will comprise of a tunnelled station with two platform tunnels and a central concourse running west/east sited beneath Finsbury Circus which will accommodate a construction access shaft. Access passages, escalator barrels and lifts will connect the platform level tunnels to ticket halls in Moorfields and Liverpool Street. New concrete substructures at Blomfield Box, Moorgate Shaft and Broadgate Ticket Hall will contain plant, staff and public areas.	Extracted Information not available	100-150	3 years, 11 months (51 Rail Periods)*	5,487
C512 - Whitechapel Station Main Works (JV: Balfour Beatty Civil Engineering Ltd/ Morgan Sindall Group Plc/ VINCI Construction Grands Projects)	Station (mined shafts)	The C512 contract involved the partial demolition of Whitechapel Station and construction of a new station and ticket hall. The project also included the construction of two 30m deep shafts and installing the new platforms for the Elizabeth Line in the platform tunnels. These works involved working over London Underground and London Overground live railways.	Extracted Information not available	100-150	5 years, 7 months (73 Rail Periods)*	19,206
C520 – Custom House Station Main Station Works (Laing O'Rourke Construction Limited)	Station (Surface)	The Custom House Station will comprise a surface level station with two platforms and roofed concourse various staff and plant areas will be constructed at platform level whilst the concourse level will enable pedestrians to travel to and from Docklands Light Railway, Excel Exhibition Centre and local highway on Victoria Dock Road. Pedestrians will travel via a new lift and foot bridge that will be installed on the old Barge Public House Site. A temporary lift and foot bridge will be installed to the western most zone of the site, to enable the removal of the existing pedestrian footbridge and in turn allow the station piling and installation of the precast elements to progress with minimal disruption.		30-35	3 years, 3 months (42 Rail Periods)	4,268

C610 Systemwide Main Works (JV: Alstom Transport / TSO / Costain Ltd)	Systemwide	The C610 contract involves undertaking the systemwide fit-out of Crossrail's 42km of twin bored tunnels. As part of this project, a 475m long concrete batching train was commissioned to pour sections of the track slab.	Extracted Information not available	250-300	2 years, 6 months (33 Rail Periods)*	342,884
C807 - Wallasea: Excavated Material By Water (JV: BAM Nuttall Limited / Van Oord UK Ltd)	Excavated Material Transfer Station	The Docklands Transfer Station (DTS) situated in Barking formed part of the C807 Marine Transportation contract which involved the design, construction, operation and management, including maintenance of an excavated materials transfer station, where material was conveyed via a jetty to vessels for transfer to Wallasea Island.	Extracted Information not available	40-45	3 years, 6 months (45 Periods)	17,814

<sup>1</sup>This indicates a project that has yet to be completed. Consumption data is still being recorded.

<sup>2</sup>A Rail Period consists of 4 weeks and there are 13 periods within a financial year.