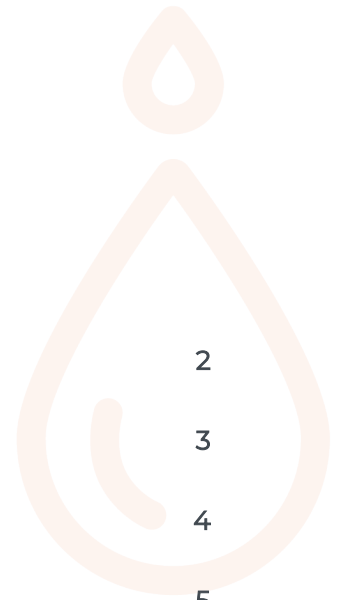


Developers' guide  
**Water connections**

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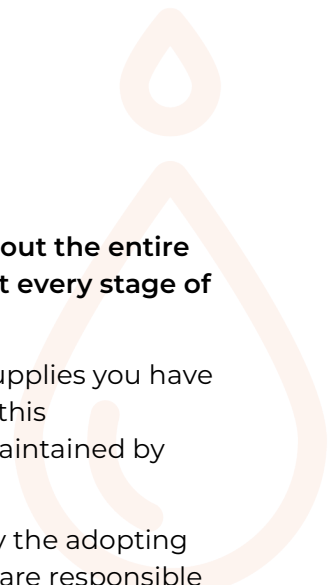
# Introduction and process

**Last Mile aims to provide the highest standard of customer service throughout the entire connection process providing the customer with a single point of contact at every stage of the project.**

We will be installing the water distribution infrastructure to ensure the new supplies you have requested are installed/commissioned to the required metering points. Once this infrastructure has been commissioned it will then become fully owned and maintained by the adopting Network Operator.

An approved design will be provided for you which will have been validated by the adopting Network Operator. It is essential that the elements of the installation that you are responsible for are installed to the exact specification required on the design. Failure to adhere to this could result in the commissioning of the new infrastructure being delayed and/or incurring additional costs, something we are very keen to avoid.

Finally, if there is any part of this project that you are unsure, unhappy or really pleased about, please don't hesitate to contact us. In addition, we will also provide you with details of our Regional Construction Manager should you wish to escalate any queries.



# Responsibilities

The table clearly defines who is responsible for the various tasks required for the installation of the water services on your site, these may vary slightly if specifically requested at quotation stage. Please check your proposal to confirm or call your Project Manager to discuss.

## Materials:

- We will arrange for all water service and mains materials to be delivered to site ready for our teams to install.
- Please take care of all materials and ensure they are stored safely and securely for our teams to use.
- Please ensure that mains pipe is protected and kept in a clean area. Please note that any pipes that have cuts or scratches to a depth greater than 10% of their wall thickness must be discarded.

Tasks	Customer	Last Mile
Request call off service connections from Last Mile	✓	
Safe and secure storage area available prior to works commencing	✓	
Security for plant and contractor's equipment delivered to site	✓	
Excavation and reinstatement of onsite pipe trenches (unless stated otherwise in the contract)	✓	
Lay all water mains of 63mm diameter and above in trenches pre-excavated by the site developer or the site developer's representatives (unless stated otherwise in the contract)		✓
Connect water services for 25mm/32mm diameter service pipes from mains to meter boundary		✓
Connect water services previously laid 'dead' by the site developer or their representatives (up to 63mm only)		✓
All work for install of service pipes is carried out by an approved contractor (e.g. WIAPS) and provide suitable self-certification	✓	
Excavation of onsite joint bays	✓	
Supply and installation of water pipe (up to boundary box)		✓
Provide and install water meters		✓

# Requesting works

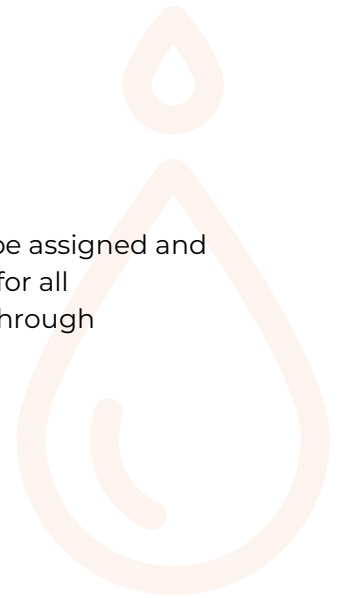
Once your project moves into the construction phase a Project Manager will be assigned and will contact your site team. The Project Manager will be your point of contact for all communication and will hold a pre-start meeting with your site team to run through processes and requirements and more specific project deliverables.

## Minimum lead times for calling off work are:

- Mains pipe installation - 20 working days
- Service connections - 15 working days
- Work in public highway - 40 working days

Please be aware that the below requirements need to have been met prior to our site attendance to ensure the works can be completed without aborted visits.

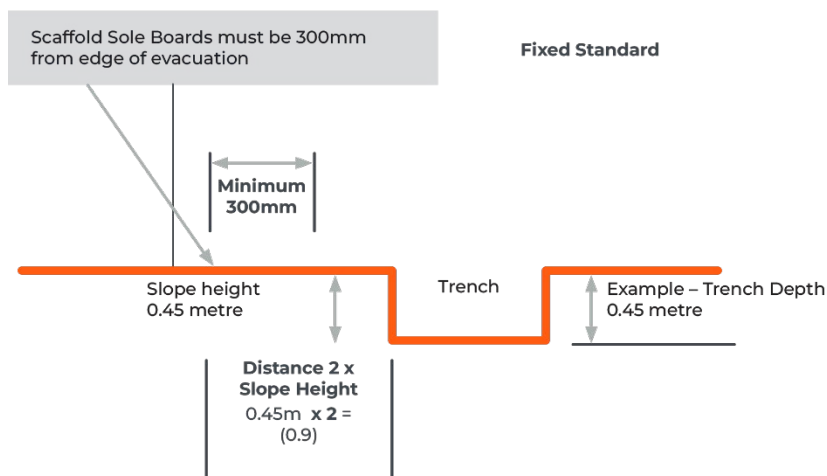
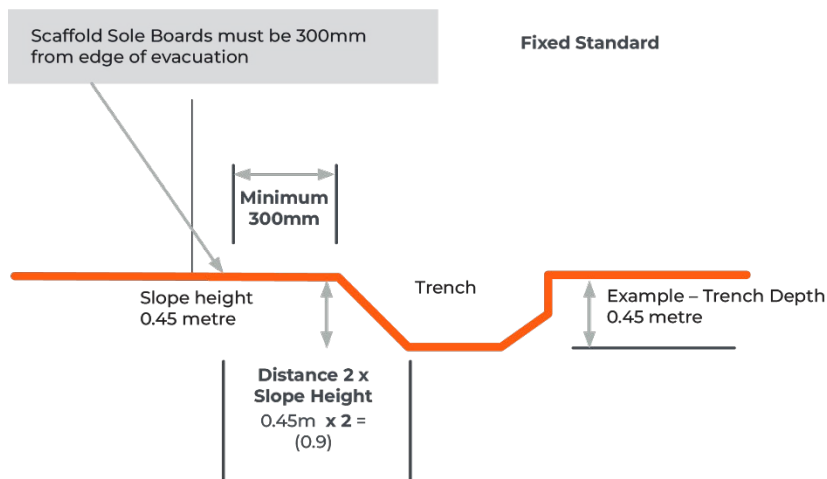
- Final ground lines and levels are determinable.
- Excavations are suitable and safe.
- Scaffolding has been removed from our work area. Any scaffolding near trenches complies with the information on page 5.
- Ducting has been installed to the correct specification and position where required.



# Working near scaffold

Last Mile must ensure a safe working environment when working near scaffolding for its installation teams; to allow this we must implement the following in line with National Access & Scaffolding Confederation TG20 Operational Guide Section 5:

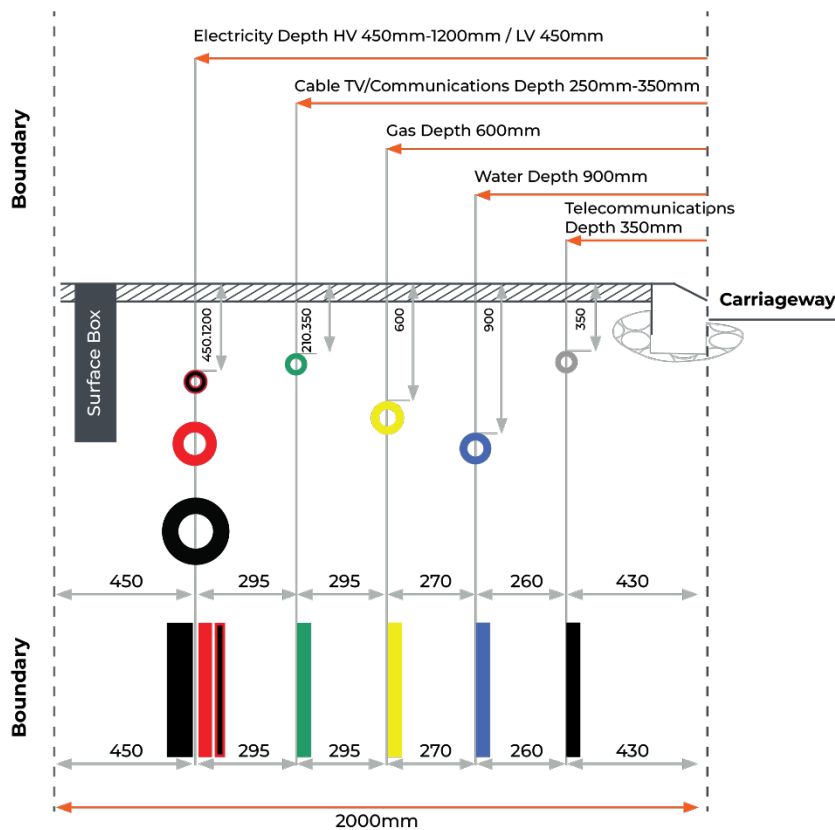
- Scaffold must be designed and erected by competent persons.
- It must have an in-date scaffold tag confirming its safe condition.
- Allow safe access and egress to the point of work.
- There must be no one working on the scaffold at the time when our installation team are completing their works.
- Scaffold sole boards must be a minimum of 300mm from the edge of the excavation.
- The bottom of the excavation must be twice the height of the trench away from the sole board horizontally.
- Work may only take place under scaffold at the discretion of the team on-site after consultation with their supervisor or Manager.



# Water mains – Open trench

Unless specified otherwise in the contract, the Site Developer must:

- Excavate trenches to the required level providing the appropriate depth of cover to the top of the pipe, unless otherwise specified in the contract.
- Excavate water service joint holes to allow complete access to a depth of 300mm below the bottom of the pipe.
- Ensure the trenches are excavated so that water mains can be laid in accordance with the National Joint Utilities Group (NJUG) guidelines, as shown below:



Self-Laid Mains shall maintain minimum proximity to buildings and structures as specified by the Water Company and shown in the table:

Note: Mains connection joint holes require 300mm clearance beneath pipe, as illustrated on page 7.

Nominal pipe Size mm	Min proximity required (m) from center line of water main
<299mm	3 m
>300mm	5 m

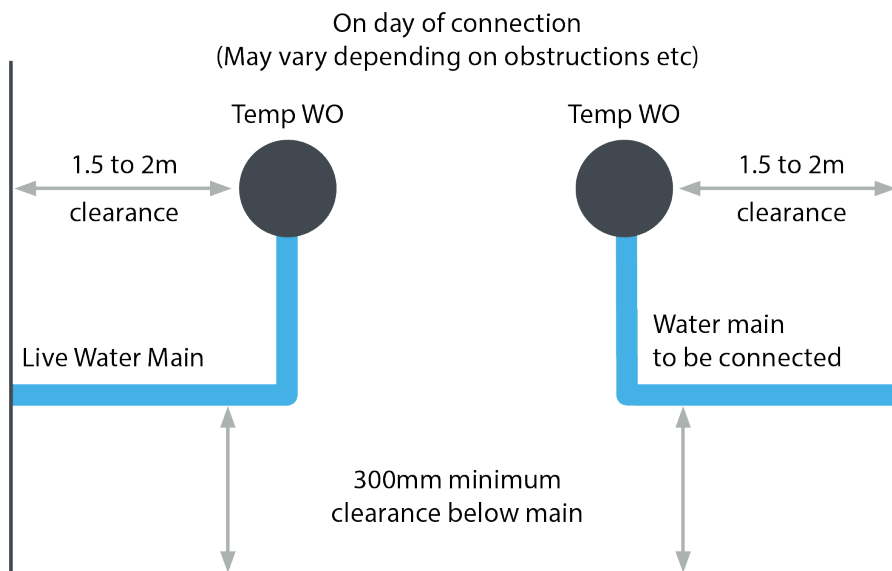
**Only materials approved by the adopting Network Operator must be used.**

The Site Developer must:

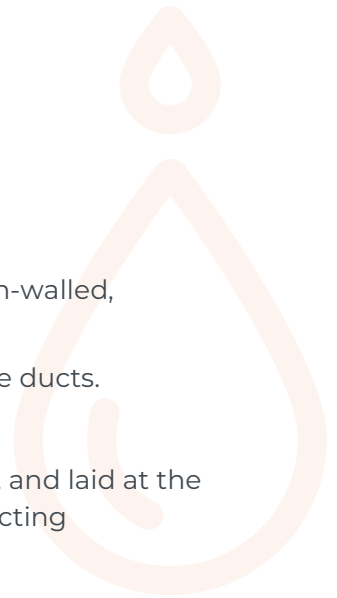
- Install the outside kerb line and define the inner kerb line before Last Mile commence work on site.
- Ensure ground levels are within +150mm and -150mm of the finished levels before Last Mile can start work.
- Fully surround and cover the water main with a minimum depth of 150mm fine fill material above the crown of the pipe.
- Position detectable water warning marker tape 150mm to 250mm directly above the water main.

The trench must be backfilled prior to any pressure testing and chlorination of the water mains.

**General excavation requirements for in line connections:**



# Ducted water mains



The Site Developer must:







- Install an approved type of utility ducting, that is Rigiduct (Rigiduct is a twin-walled, smooth internal surface, blue in colour).
- Position water marker tape 150mm to a maximum of 250mm directly above ducts.
- Last Mile will provide ducting layouts on a specific water design drawing.
- Ensure that ducting for mains road crossings is the correct colour, material, and laid at the correct depth and location. The table below shows the minimum mains ducting requirements:

Duct Sizes (Road crossings)		
OD Water pipe size (mm)	Minimum ID duct size (mm)	Depth of cover (mm)
25/32	50	900
50/63	100	900
90/110/125	150	900
160/180	225	900
225	300	900
250	350	900
315	400	900
355	450	900

Note: Do not use corrugated ducting for road crossings

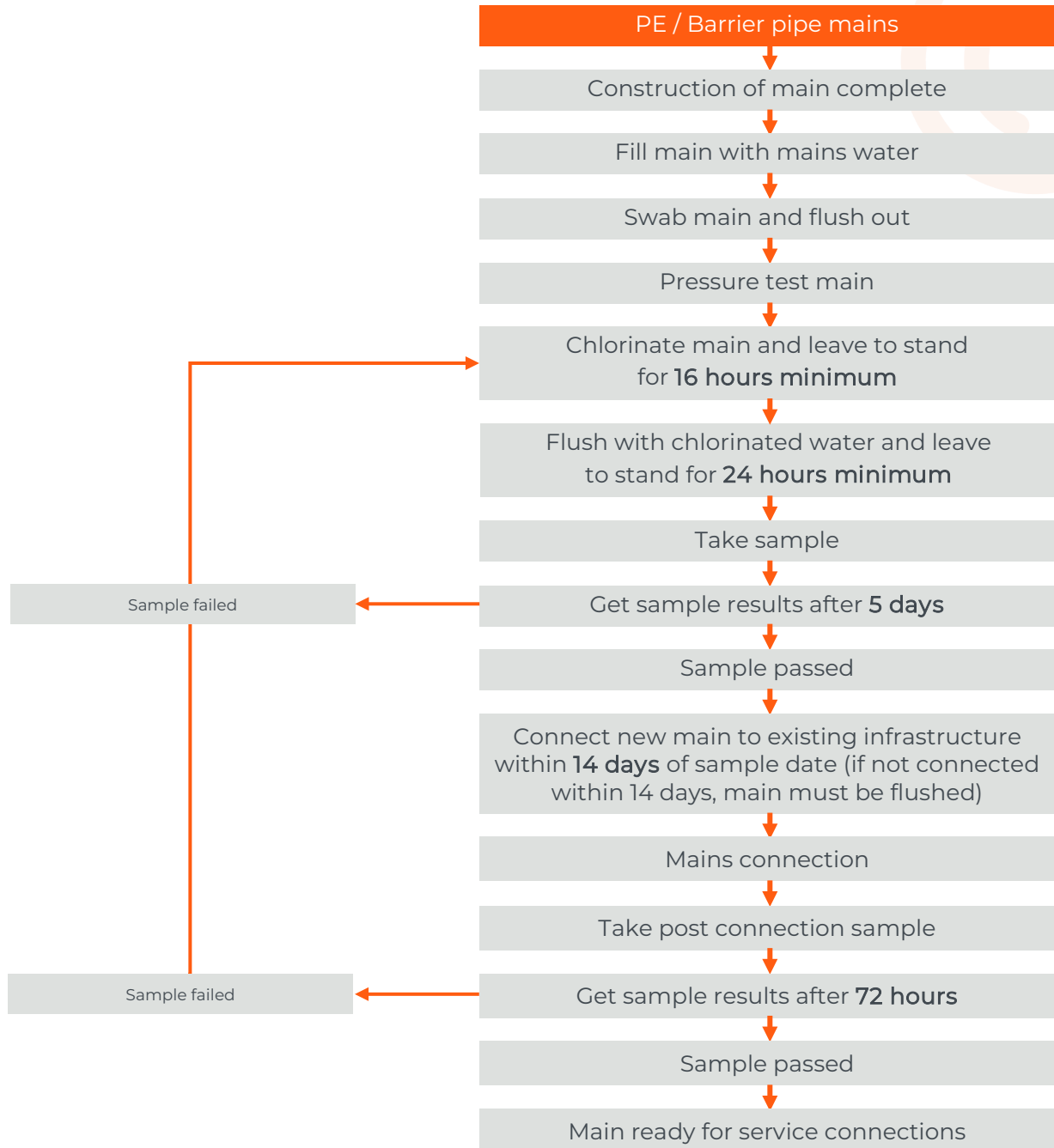
# Minimum excavation requirements

Minimum excavation requirements to support connections. Excavation base to be 300mm below pipe

Connection type	Applicable mains diameters	Excavation size	Additional bell hole in middle in direction of offtake	Excavation shape
<b>End on connection</b> (Note: the excavation dimension is for the live main to be exposed)	≤180mm mains diameter	2.1m x 0.7m	n/a	
	250/315mm diameter	3.3m x 0.9m	n/a	
<b>Insert Tee</b>	≤180mm mains diameter	7.3m x 0.7m	1m x 0.7m	
	250/315mm diameter	10.6m x 0.9m	1m x 0.9m	
<b>Branched offtake</b>	≤180mm mains diameter	1.5m x 0.7m	2m x 0.7m	
	250/315mm diameter	1.5m x 0.9m	2m x 0.9m	

# Pressure testing and chlorination of water mains

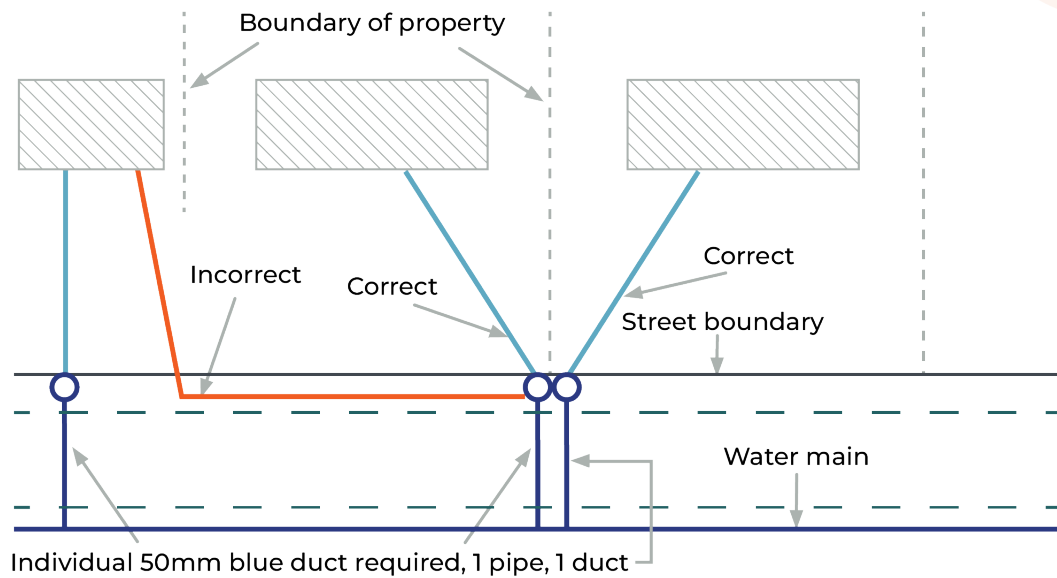
The following flow chart sets out an example pressure testing and chlorination process and timescales:



# Water services – Installation

## The Site Developer must:

- Lay the service pipes from inside the building to the proposed water main.
- Ensure that the installed service pipes and fittings must comply with Water Supply (water fittings) Regulations 1999.
- Ensure the line of the water service pipes follows the routes shown on the drawing below. Ideally, the service route should be perpendicular from the service entry position of the property to the boundary.



### Whether the Site Developer employs direct staff or contract workers to install the 'dead' service pipes, they must:

- Ensure the pipe is a continuously coiled 'dead' 25mm diameter service pipe.
- Lay the water service directly into the ground or insert it within a water service duct, approved by the adopting Network Operator.
- Cap or plug pipe ends at all times to prevent contamination caused by groundwater and debris.
- Lay the water service pipes with a minimum cover of 750mm and maximum of 900mm up to the point of connection.
- Ensure the line of the water service is a minimum of 250mm away from other utility services.
- Ensure the boundary box is installed in the agreed location shown on our drawing.
- Ensure, for pipes 63mm and above, a suitable pressure test and a chlorination has been completed. Pipes 63mm and above must also be inspected by the local water company and you will need to provide a suitable pass certificate.
- Discard any water service pipes that have kinks, cuts or scratches to a depth greater than 10% of their thickness.
- Fully surround and cover the water service with a fine fill material to a minimum of 150mm above and below the crown of the pipe.
- Place water warning marker tape 150mm to 250mm directly above the water service.
- Ensure all work is carried out by an approved contractor (e.g. WIAPS) and provide suitable self-certification for 25mm/32mm diameter service pipes

OR

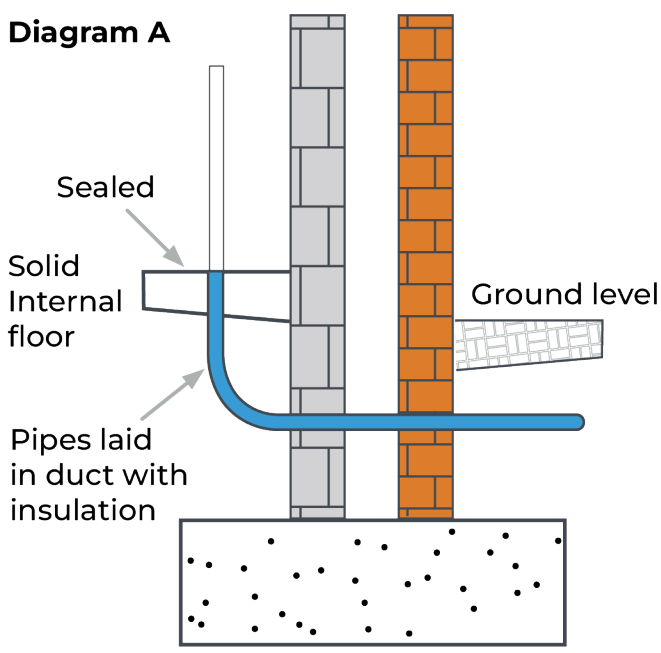
- Arrange for the local water company to carry out pipework inspections for any installation and provide a suitable pass certificate.
- If the water main is on the other side of the road, install a duct across the road and install the service pipe through the duct to the water main.
- Ensure the water service pipe is ducted where it enters a building below ground, to where it exits above ground and into the building.
- You must make sure that all ducting is insulated and adequately sealed, as shown in diagram A.
- Install a stop tap and drain off where the 'dead' water service terminates within the property. The Site Developer must do this before service connection. Diagram B on page 13 shows this.
- Boundary boxes must not be installed in driveways or cross-over areas where vehicles are likely to drive over. See diagram C on page 13.
- Agree the boundary box location with Last Mile and the host water authority prior to installation.

#### Note:

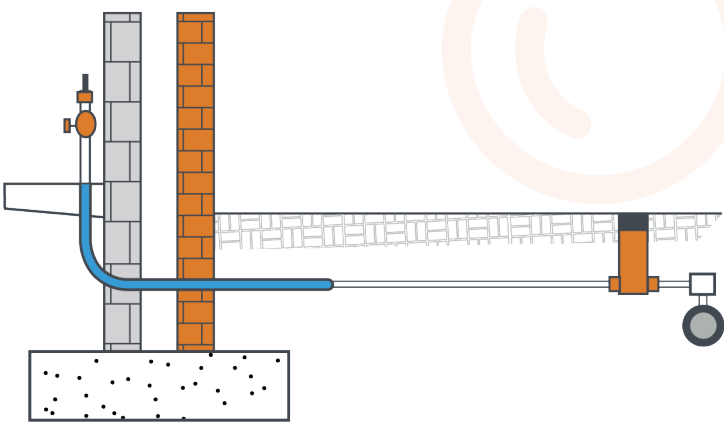
In the case of 600mm service strips, boundary boxes must be placed in an unmade area on private property, as close to the boundary as possible and not in driveways or cross-over areas where vehicles drive over.



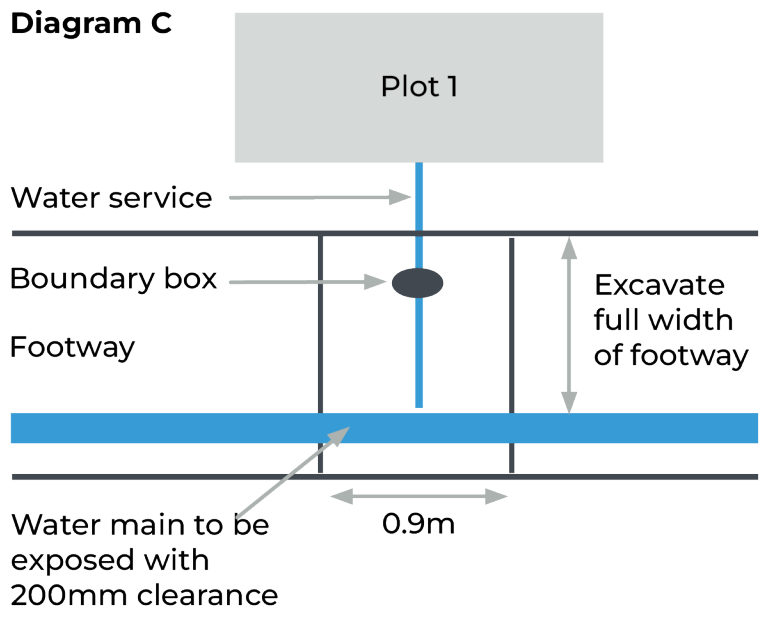
**Diagram A**



**Diagram B**



**Diagram C**



# Apartments – External meter manifolds

## The Site Developer must:

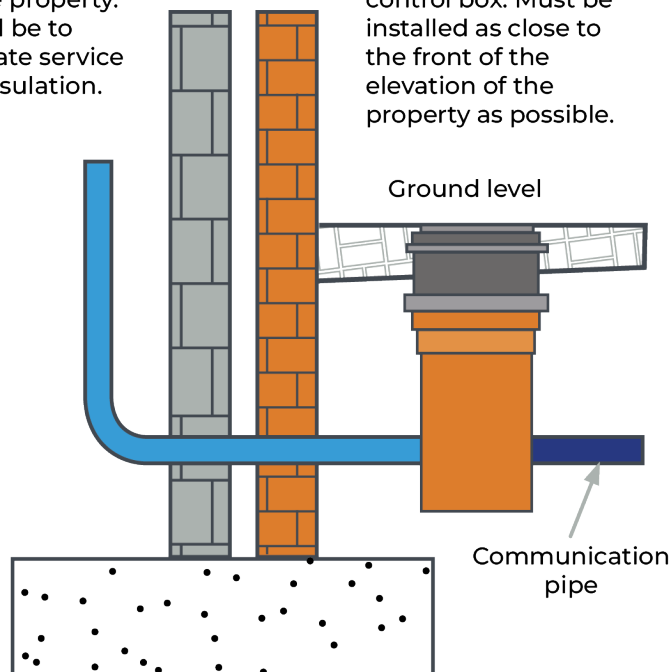
- Site the manifold depending on water company preference, to be depicted on the site drawing.
- Ensure that external port manifolds will be accessible 24 hours a day to all residents for maintenance and meter reading.
- Cap or seal all service pipework.
- Clearly identify each apartment's service pipe at the boundary prior to connection and installation of the meter.
- Not route service pipes through one property to another.
- Install the service pipe from the manifold to the water main.
- Comply with the Water Supply (water fittings) Regulation 1999.

## This diagram shows the external water meter manifold:

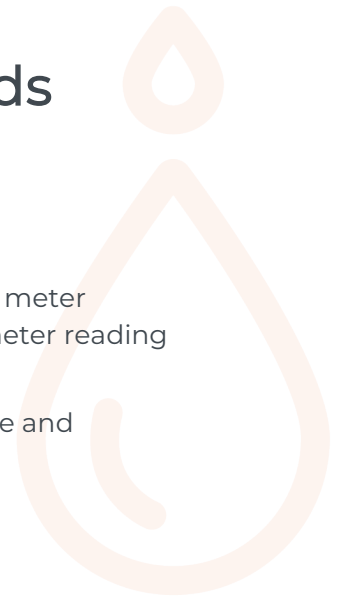
### To be installed by the developer

Supply pipe ducted as it enters the property. Duct should be to accommodate service pipe with insulation.

Multi-port external control box. Must be installed as close to the front of the elevation of the property as possible.



# Apartments – Internal meter manifolds

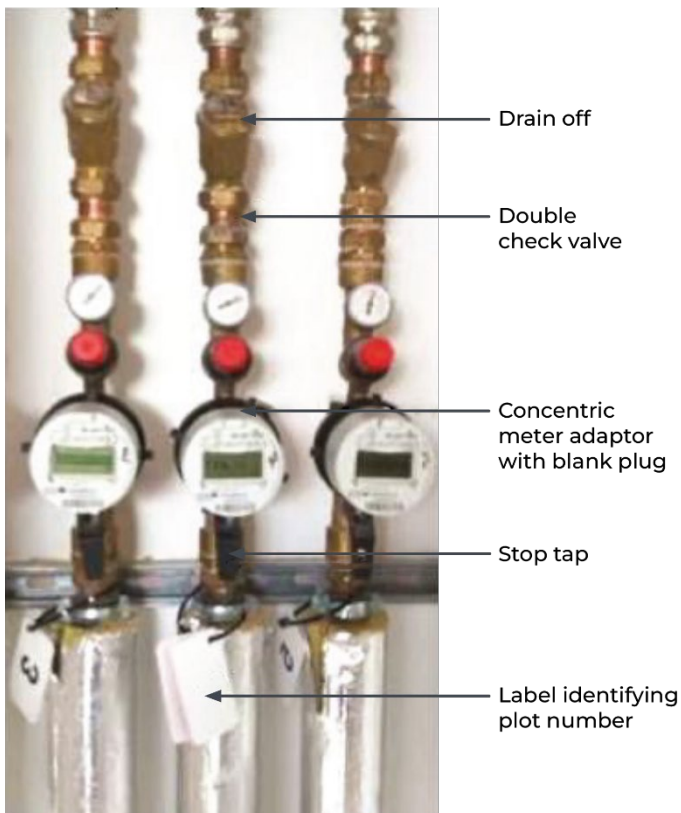


## The Site Developer must:

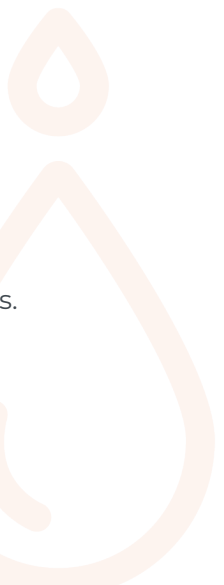
- Ensure that stop taps and water meters are located in a communal area or meter cupboard that residents can access 24-hours a day for maintenance and meter reading purposes.
- Space internal pipework not less than 100mm apart. This is for maintenance and replacement of stop taps and water meters.
- Provide common access to all pipe runs to each property.
- Not route service pipes through one property to another.
- Comply with the Water Supply (water fittings) Regulation 1999.
- Clearly identify supplies to flatted properties at the meter, prior to the installation of the meter.

The diagram shows a typical example of the pipe work to be installed by the Site Developer. It shows internal meters within a communal area or meter cupboard.

## To be installed by the developer



# Water fittings – Sluice valves & hydrants



## Last Mile will:

- Install sluice valves to the water main for future maintenance and isolation purposes.
- Fit to the water main either wash out or fire hydrants for flushing out purposes.
- Install the valves and hydrants.

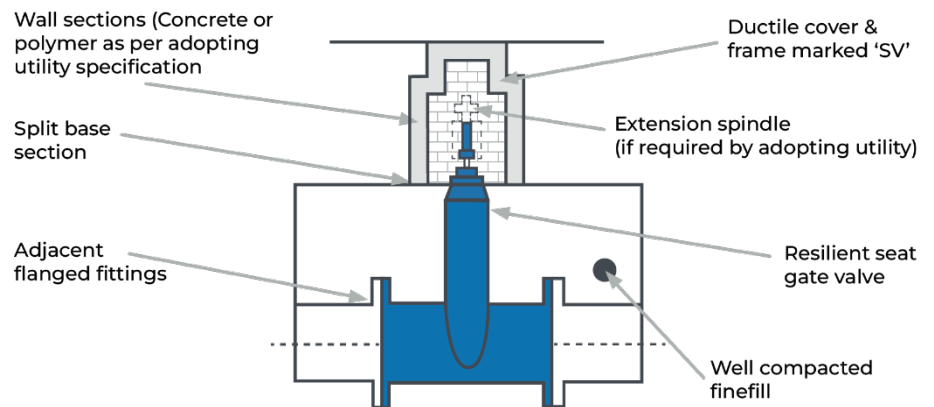
## The Site Developer must:

- Use the valve and hydrant surface box covers supplied by Last Mile.
- Install this surface box as part of the permanent reinstatement.
- Ensure that all pipework and materials are stored off the ground in a level, stoned area, away from any possible contamination.
- Cap all pipe ends and store materials on covered pallets to protect against contamination.

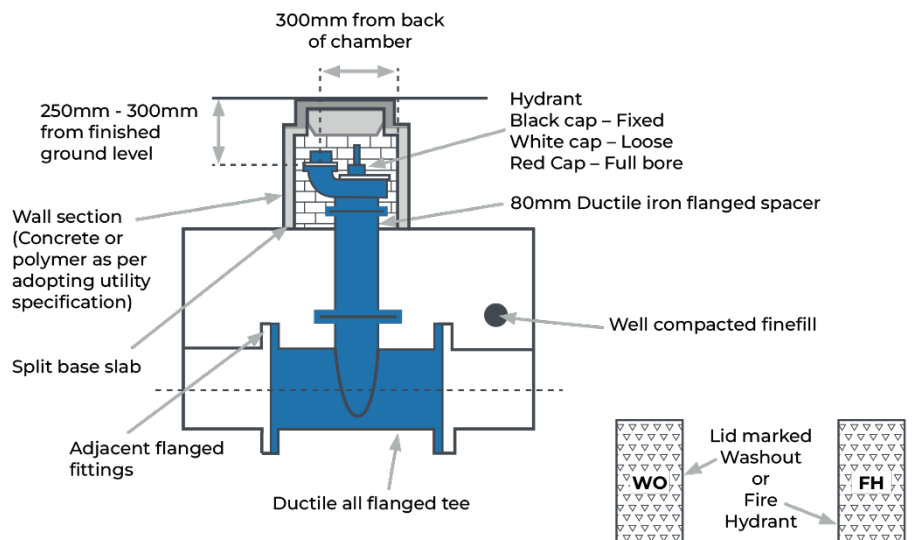
## The diagram shows a typical section detail for a sluice valve surface box:

### Note:

Sluice valves, fire hydrants & washouts will have protective sections placed around them with the correct identifying lids. These need to remain in situ, clean, accessible and free from obstruction. Failure to comply with these standards will result in delays to commissioning the water mains.



## The diagram shows a typical section detail for a hydrant surface box:



# Meter & Pressure Monitoring Valve (PMV)

**Large scale housing developments may require a district bulk water meter and pressure reducing valve for leakage monitoring.**

Usually Last Mile carries out this work, but it may be done by the host water company in complex circumstances, determined on a case by case basis.

## Bulk water meters

These measure the water usage within a pre-determined Districted Meter Area (DMA).

## Pressure Monitoring Valves

These can be installed where high pressure water is reduced down to a lower pressure to help reduce/ minimise leakage within a DMA. Where applicable, these works will be carried out by the incumbent water company.

The image below shows a typical bulk water meter and PMV installation:



# Water emergencies



**When you phone the water emergencies number, the call centre will ask for more information.**

**They will ask:**

- Your name and phone number.
- The address or location of the suspected water leak.
- Severity of leak (trickle, stream of water, flooding, fountain).
- How long has the leak been visible.
- Are any properties affected.

**Advice if you suspect a water leak, loss of supply or water quality issue:**

- Do not enter a trench that is flooded.
- If there are injuries that require a medical response, ring 999 immediately.
- Make the area safe and notify anyone on-site of the situation.
- Notify the relevant water company by telephone on their emergency line. The number for each water company is on page 19.
- Minimise the exposure of the potable water network and the environment, provided it is safe to do so.
- Minimise the discharge of any highly chlorinated water, provided it is safe to do so.
- Maintain control of the incident until the relevant competent persons are on-site to take control.
- Assist the relevant competent persons on site if required to do so.

**Note:**

If you can see a water leak on site, loss of supply or water quality issues, phone the 24-hour regional water company emergency number listed on page 19.

Company Name	Telephone	Company Name	Telephone
Anglian Water	0800 771 881	Northumbrian Water Ltd	0800 393 084
Affinity Water	0800 376 5325	Portsmouth Water Plc	023 9247 7999
Bournemouth Water Ltd	01202 590 059	Severn Trent Water Ltd	0800 783 4444
Bristol Water plc	0345 702 3797	South East Water Ltd	0333 000 3330
Cambridge Water plc	01223 706 050	South Staffordshire Water plc	0800 389 1011
Cholderton & District Water Company Ltd	01980 629 203	South West Water Ltd	0800 230 0561
Hafren Dyfrdwy (Sever Dee)	0800 085 8033	Southern Water Services Ltd	0800 820 999
Dwr Cymru (Welsh Water)	0800 052 0130	Sutton & East Surrey Water plc	01737 772 000
Essex & Suffolk Water Ltd	0800 526 337	Thames Water Utilities Ltd	0800 714 614
Hartlepool Water plc	0800 028 4816	United Utilities Water plc	0345 6726 723
Last Mile Water	0330 111 2014	Wessex Water Services Ltd	0800 692 0692
		Yorkshire Water Services Ltd	0800 573 553

Last Mile takes care of your water connections, as part of a multi-utility or standalone solution, all with one point of contact

### Last Mile connection guides

Our connection guides for site managers and builders are an excellent referral source and enable you to ensure that you have the correct ducting, trench depths and even meter box positionings on your development for a smoother connections and energising process.

[Download our Electric and Gas connections guides](#)

### Free quotation

For a free, no obligation proposal and outline design, email [sales@lastmile.co.uk](mailto:sales@lastmile.co.uk) or call us on 03300 587400

