



# Customer Guide

Building Near Water Corporation Assets

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# 1. Introduction

These guidelines apply to all metropolitan Melbourne water corporation regions. They have been created to assist property owners, builders, designers, plumbers and water corporation officers.

The purpose of these guidelines is to make sure that all works proposed near water authority assets are constructed in a way that ensures:

- water corporation assets are protected from damage
- proposed works are structurally sound, and
- the water corporation can safely access their assets to do maintenance and upgrades

It is a legislated requirement under the provisions of the Water Act 1989 that for any works constructed over an easement owned by a water corporation or within one metre of a water corporation asset, the relevant water corporation must give approval before works can start.

When we talk about water and sewer 'assets' in this document, this means any structure, either above or below ground, that is looked after by a water corporation.

This includes water and sewer pipes (referred to as mains), drains, maintenance holes, fire services and other assets that help carry clean water to customers and take waste away safely.

These guidelines outline what you need to do for a water corporation to consider approving an application to do works over easements or within one metre of their assets. Meeting these requirements helps to protect water and sewer assets from damage while making sure that you will avoid the cost and inconvenience of removing a structure that blocks access to an asset when the water corporation needs to complete maintenance works.

Works may include but are not limited to structures, excavation, paving and other services.

Sewers larger than 225mm in diameter are critical assets servicing a significant number of customers. As it is important that water corporations can always access these critical assets, works within one metre of a large sewer are usually not allowed.

If an owner gets approval to do the proposed works, the owner accepts sole responsibility for any loss or damage that could happen as a result. Details of this approval will be shared with any person making an 'Application for an Information Statement' as part of the advice related to section 158 of the Water Act 1989.

## 2. Asset Protection

There is always a risk of damage to water and sewer assets when undertaking works near water corporation assets. If these assets are damaged, concrete and other materials can enter the pipes or pipes can burst, leading to costly repairs and disruptions to work.

The flow-on effect impacts not only the site but also neighbours, local businesses, roads and public spaces.

All sewer and water assets must be identified and protected before starting works. The responsibility is on planners, designers, drafts people, builders and developers, homeowners and other authorities, and anyone working with these professionals to understand the exact location of water and sewer assets.

If water corporation assets are damaged, a significant repair cost will be charged to the person or business responsible for the damage. If the proposed works are designed to meet these guidelines then there is a much lower risk of damage to water corporation assets.

**Figure 1: Sewer damage.**



Image depicts damage to a sewer main where asset protection was not adhered to.

Figure 2: Water main damage



Image shows damage to a water main where the assets were not properly protected.

### 3. How to get your works approved

If you wish to start any works within one metre of water corporation assets or over an easement, you will need to get approval from the relevant water corporation.

To have your proposal assessed as quickly as possible, please follow these steps:

1. Find out if the proposed works will be located over an easement or within one metre of a water corporation asset. Please note:
  - Easement details are shown on the property title
  - Water and sewer asset information is available from the relevant water corporation. Information may be available via online systems/apps, or you may apply for information to be sent to you (application fees may apply)
2. Look at the guidelines in this document to find out if the proposed works comply.
3. Lodge an application with the relevant water corporation including details of the proposed works.

**You may need to submit these plans:**

- Site plans
- Floor plans
- Elevations
- Footing plans

**With these details:**

- The type of structure
- Offsets to boundaries
- Foundation details
- Other relevant information, such as location of the water corporation assets and clearance between the structure and the water corporation asset

A standard fee applies to process an application. If the water corporation needs to assess the condition/location of existing assets, there may be additional costs.

If your proposal meets these guidelines, the water corporation will approve your proposal in a timely manner.

If your proposal doesn't meet the guidelines, the water corporation will let you know what needs to change for your proposed works to be approved.

**NOTE:**

If your proposal is not approved at first, there may be delays and additional costs related to your application. Please contact the relevant water corporation for further information on non-compliance resolution.

**NOTE:**

It is the owner/developer's responsibility confirm the location of water corporation assets before starting any works.

For more information on how to apply for approval please contact the relevant water corporation.

<b>Greater Western Water:</b>	1300 299 228
<b>South East Water:</b>	131 694
<b>Yarra Valley Water:</b>	1300 651 511

## 4. Definitions

Keyword	Description
<b>24-hour access</b>	Required for maintenance purposes. The water corporation must be able to enter the sewer at all times with nothing blocking access. When a structure is constructed boundary to boundary, there must still always be access for equipment and maintenance workers to complete maintenance, repairs or upgrade works.
<b>Accredited contractor</b>	A trained/accredited person authorised to carry out specialist work on water corporation assets.
<b>Adjacent</b>	Includes all works/foundations located within one metre of an asset but not over the asset.
<b>All works</b>	Includes but is not limited to: All types of building works/structures, site works, construction, demolitions, additions, garages, sheds, carports, outhouses, pergolas, verandas, gazebos, sails, decking, saunas, fences, retaining walls, swimming pools, driveways, paving, tennis courts, posts, light poles, excavations/landscaping, footings/foundations (including ground anchors), utilities, telecommunications, above-ground water tanks.
<b>Angle of repose</b>	Line of influence from pipe (generally an angle of 45 degrees taken from the pipe).
<b>Assets</b>	Water corporation-owned assets, including but not limited to, sewer mains, water mains, maintenance holes, maintenance shafts, property connection branches, vent shafts and pumping stations.
<b>Asset protection works</b>	Including, but not limited to, closed circuit television (CCTV) inspection, survey, relining, renewal or replacing of assets.
<b>Cantilevering</b>	Structure or beam extended from a wall or foundation to support a balcony or wall.
<b>Commercial development</b>	Any development which includes an enterprise that is commercial in nature, such as a new office building, factory, warehouse or shop.
<b>Easement</b>	An area of land, or part of a lot reserved by law for a specific purpose. This means there is a space for water or sewer assets to be constructed or moved to if needed. NOTE: Water Corporation assets are not necessarily contained within an easement.
<b>Footings/foundation</b>	Supporting part of a structure below ground level. Includes pier and beam, pad and screw piles. NOTE: Driven piles are not permitted for foundations/footings located near water corporation assets.
<b>Ground anchors</b>	System of tension rods/cables installed during construction which is used to support structures below ground, e.g., basement walls.



Keyword	Description
<b>Habitable</b>	Any building that is constructed for or can be readily converted for people to live or work in.
<b>Height clearance</b>	Height of a structure above ground level that is required to allow for full access to a sewer main, measured from ground level to the height of the structure wall. Applies to eaves, balconies, garages etc.
<b>Implied easement</b>	An easement is implied by Section 148 of the <i>Water Act 1989</i> , which states that works within one metre of assets require prior approval from the water corporation.
<b>Lightweight material</b>	PVC material, steel sheeting, wooden decking boards, paling fences, etc.
<b>Lightweight structure</b>	A structure that is lightweight in nature and can be manually dismantled and removed from its current position by two people, using hand tools only, within a four-hour period. Self-supporting, constructed with pad footings or on a typical concrete paving slab. NOTE: A Work Method Statement by a structural engineer supporting this may be required.
<b>Infill slab</b>	Concrete slab with a maximum thickness of 125mm, which if cut and removed will not compromise the structural integrity of the structure.
<b>Pad footing</b>	Footings with maximum depth of 600mm and maximum diameter of 350mm.
<b>Property connection branch</b>	A short length of pipe owned and operated by the relevant water corporation that services properties. It connects the property's sewer drain to the sewer main.
<b>Ramp</b>	A sloping surface joining two levels with a grade of 1 in 20 or steeper. Includes driveways and wheelchair access ramps.
<b>Sewer rising mains, vacuum lines and pressure sewers</b>	A pipe that transfers sewerage under pressure from a pumping system.
<b>Structurally independent</b>	A portion of the structure which, if removed, will not compromise the structural integrity of the surrounding structure. NOTE: A statement/work plan by a structural engineer supporting this will be required.
<b>Traverse/ traversing</b>	Includes all works/foundations within one metre of a water corporation asset where a part of the works/foundations crosses or is on top of the asset.

## 5. Assets

If you are proposing to build a structure that will be located within one metre of a water corporation's asset as shown on asset plans, the actual location of the water corporation's asset may need to be confirmed on site. This may be required as existing fences, for example, may not be located on the property boundary in the property title.

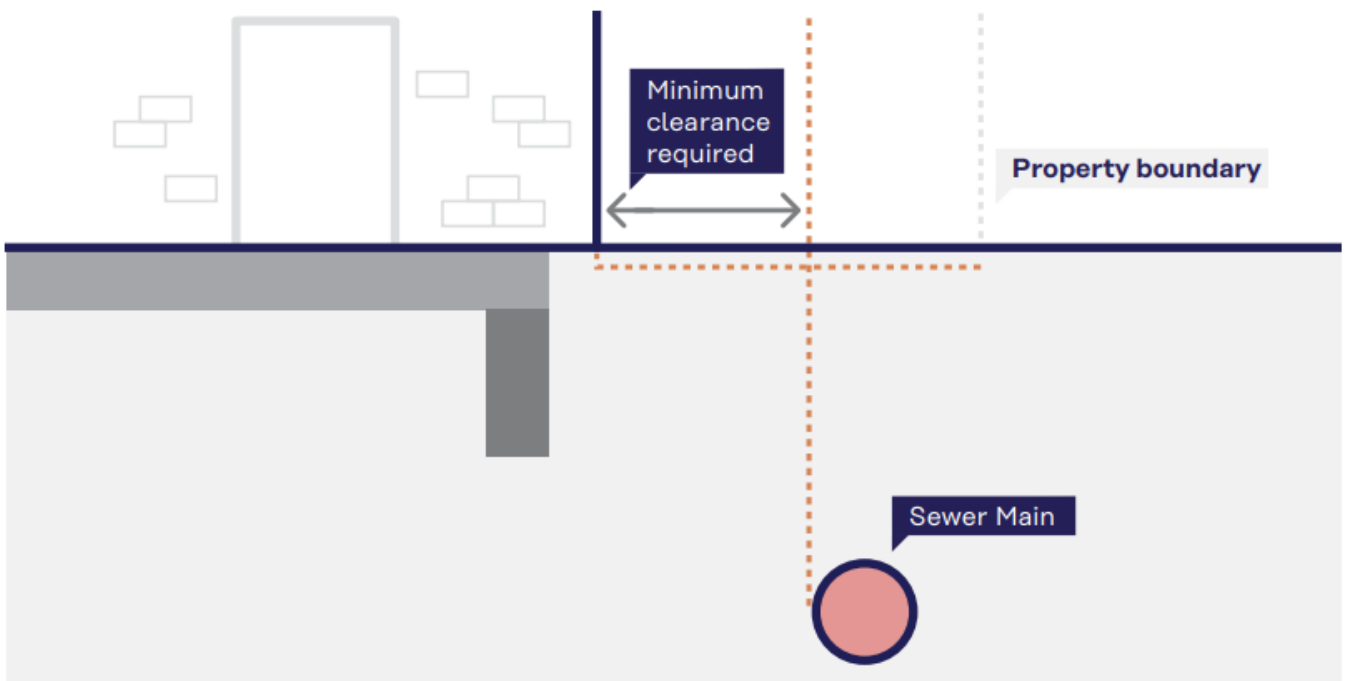
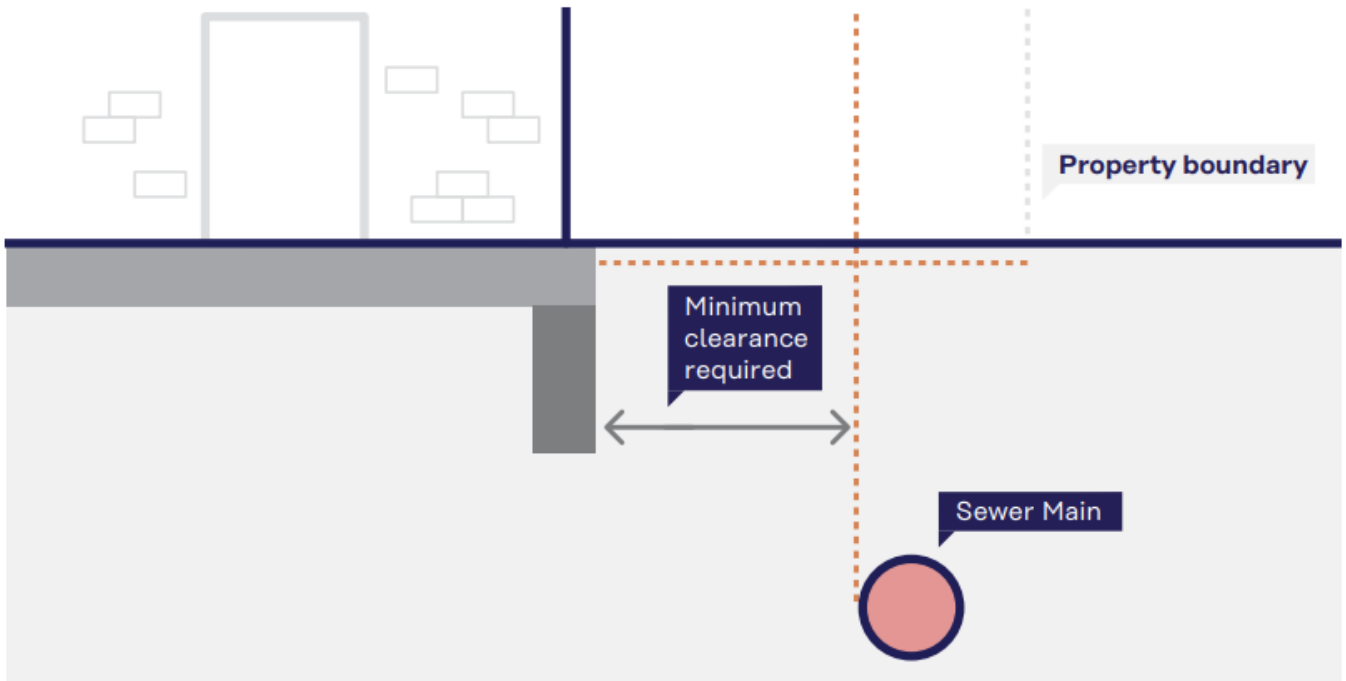
**NOTE:**

Please contact the relevant water corporation for more information about how to locate assets.

The one metre allowance is measured from the outside edge of the asset to the closest part of the works.

Figure 3: Clearances required from assets

The clearance is taken to the closest part of the works, be it foundational or wall



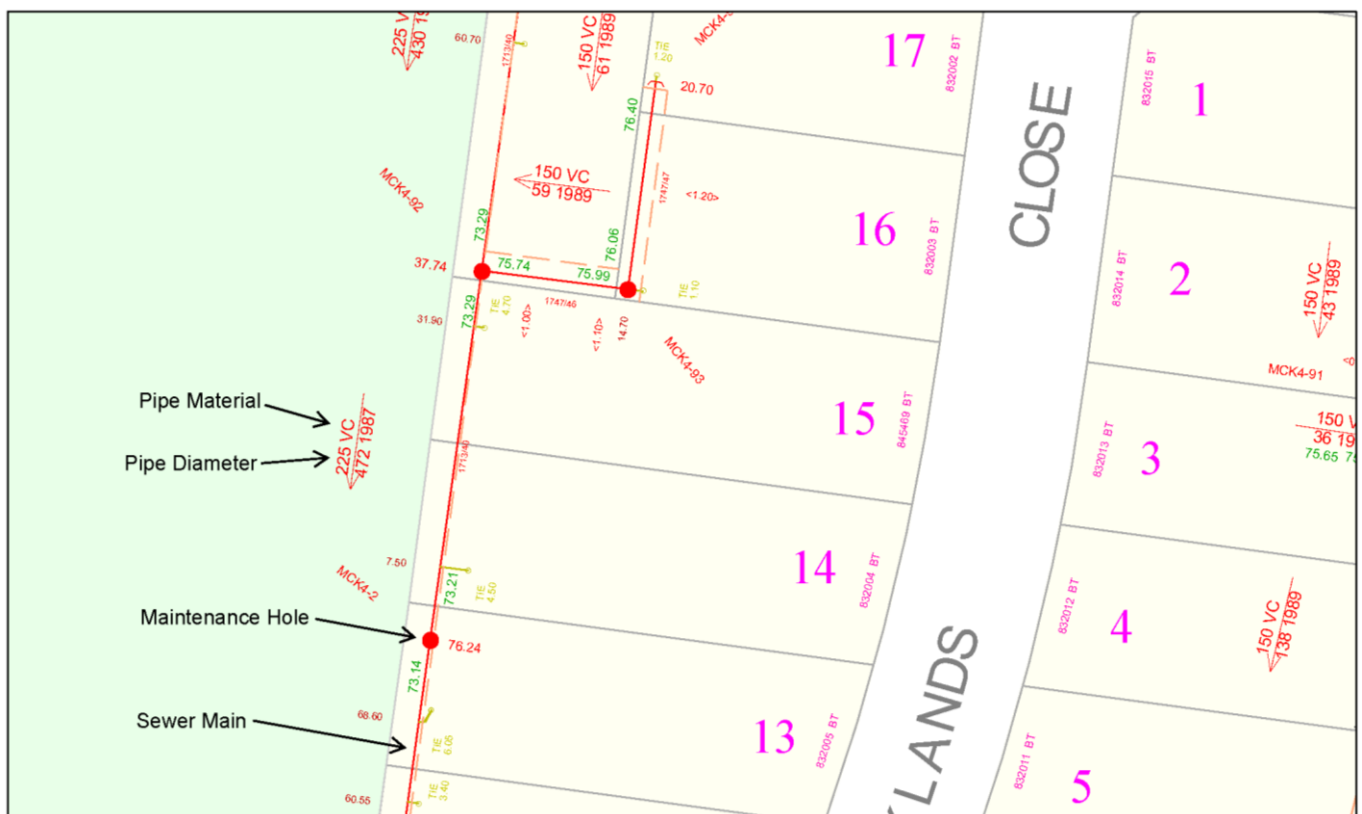
## 5.1. Sewer gravity mains

Sewer gravity mains are pipes which are designed to carry wastewater away using gravity. Gravity sewer mains vary in size and depth. The requirements to build near a sewer main also vary depending on the size, depth, pipe material and age of the pipe.

Sewers larger than 225mm in diameter are considered critical assets as they service a large number of customers. That is why it is so important the water corporation has full access at all times for maintenance purposes. This means nothing can be blocking access to the sewer at any time. Works within one metre of these assets are generally not allowed.

Similarly, for sewers with depths of 3.5 metres or more, works within one metre are generally not allowed.

Figure 4: Sewer asset plan



## 5.2. Sewer maintenance holes

A sewer maintenance hole is an underground structure with a removable cover at ground level that allows for human and machine access to a sewer main.

**Works over maintenance holes are not permitted as 24-hour unobstructed access is required.**

Works adjacent to a maintenance hole require:

- a minimum 1.5m horizontal clearance from the centreline of the sewer main
- footings, which may vary in type depending on the type of structure
- cover levels to match surface levels. If alteration works are required, the water corporation or a person authorized by the water corporation may complete these works at the applicant's expense
- suitable access for equipment and water corporation crew members to enter the sewer maintenance structure at all times

NOTE:  
Maintenance holes can only be opened by persons authorised by the water corporation.

Figure 5: Maintenance hole diagram 1

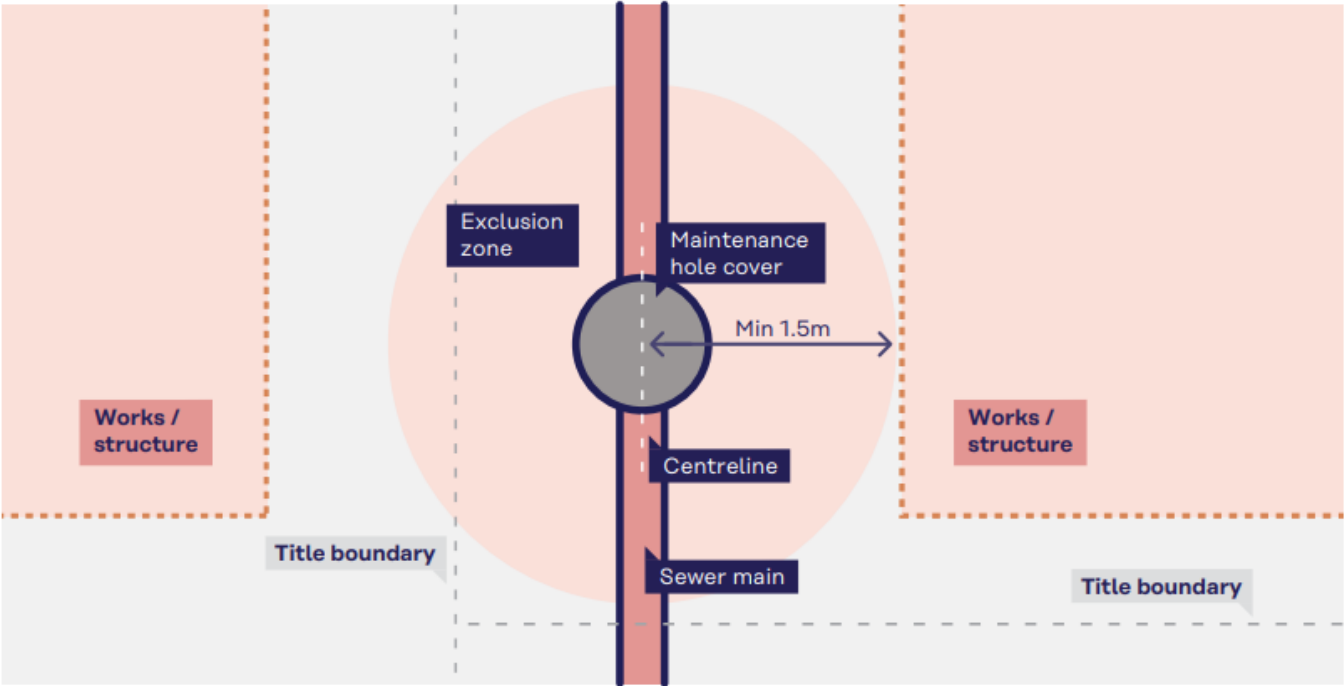
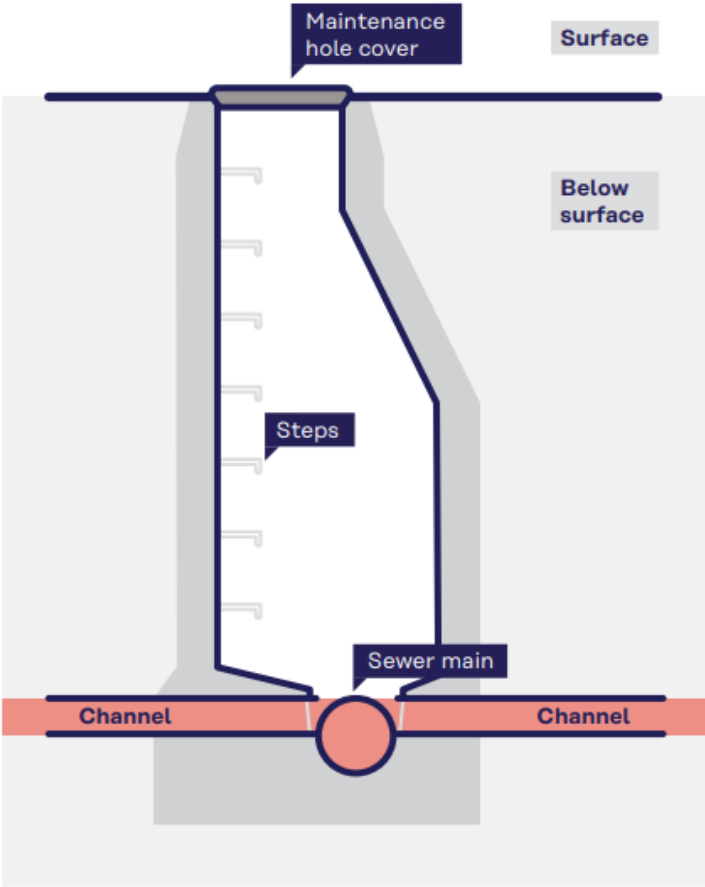


Figure 6: Maintenance hole diagram 2



### 5.3. Sewer maintenance chambers and maintenance shafts

A sewer access chamber or shaft that has a removable cover at ground level to allow only for machine access to a sewer main.

**Works over maintenance chambers or shafts are not allowed as 24-hour access is required.**

Works adjacent to a maintenance chamber or shaft require:

- a minimum 1.0m horizontal clearance from the centreline of the sewer main
- footings, which may vary in type depending on the type of structure
- cover levels are required to match the new surface levels. If alteration works are required, the water corporation or a person authorized by the water corporation may complete these works at the applicant's expense
- suitable access for equipment and water corporation crew members to enter the sewer maintenance structure at all times

NOTE:

Maintenance chambers and maintenance shafts can only be opened by persons authorised by the water corporation.

**Figure 7: Maintenance chamber and maintenance shaft clearances**

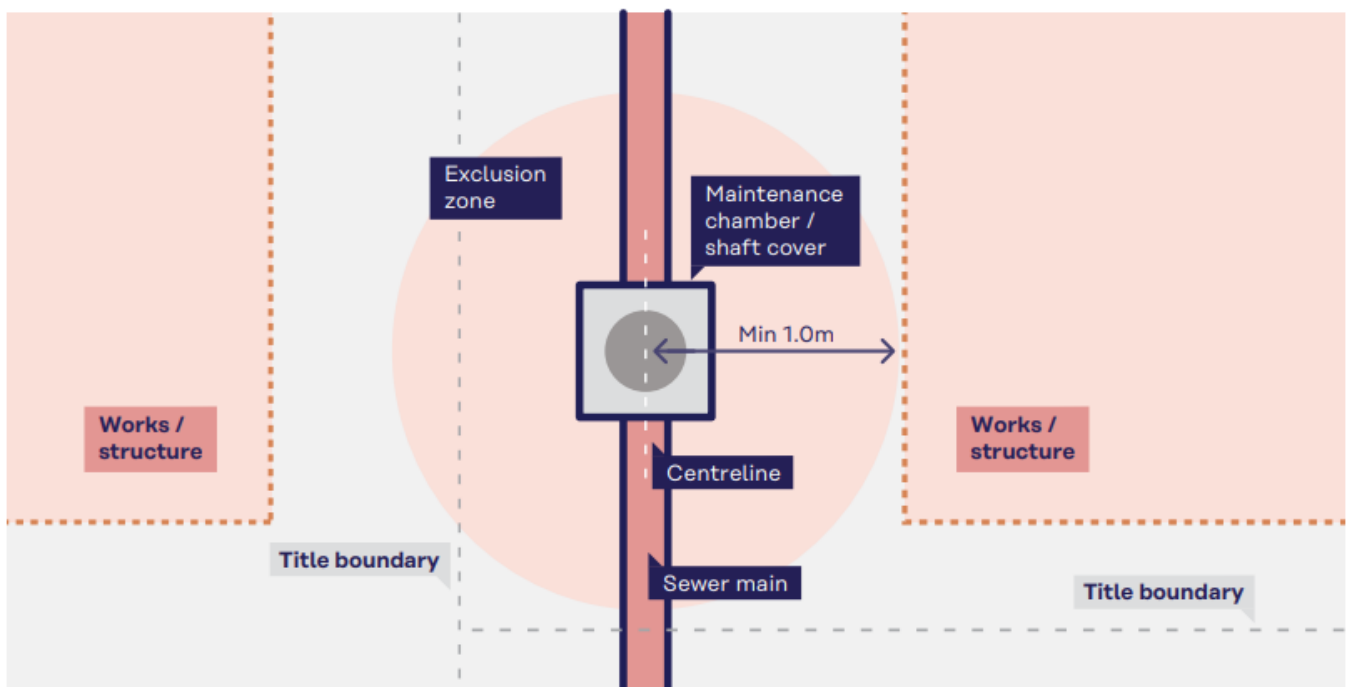
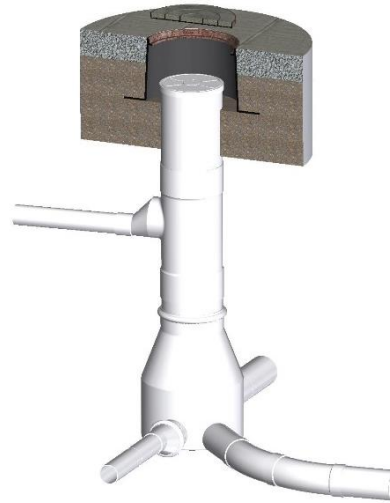


Figure 8: Maintenance chamber



Figure 9: Maintenance shaft



#### 5.4. Sewer property connection branch

A sewer property connection branch is a short length of pipe owned and operated by the relevant water corporation. It connects the property's sewer drain to the sewer main.

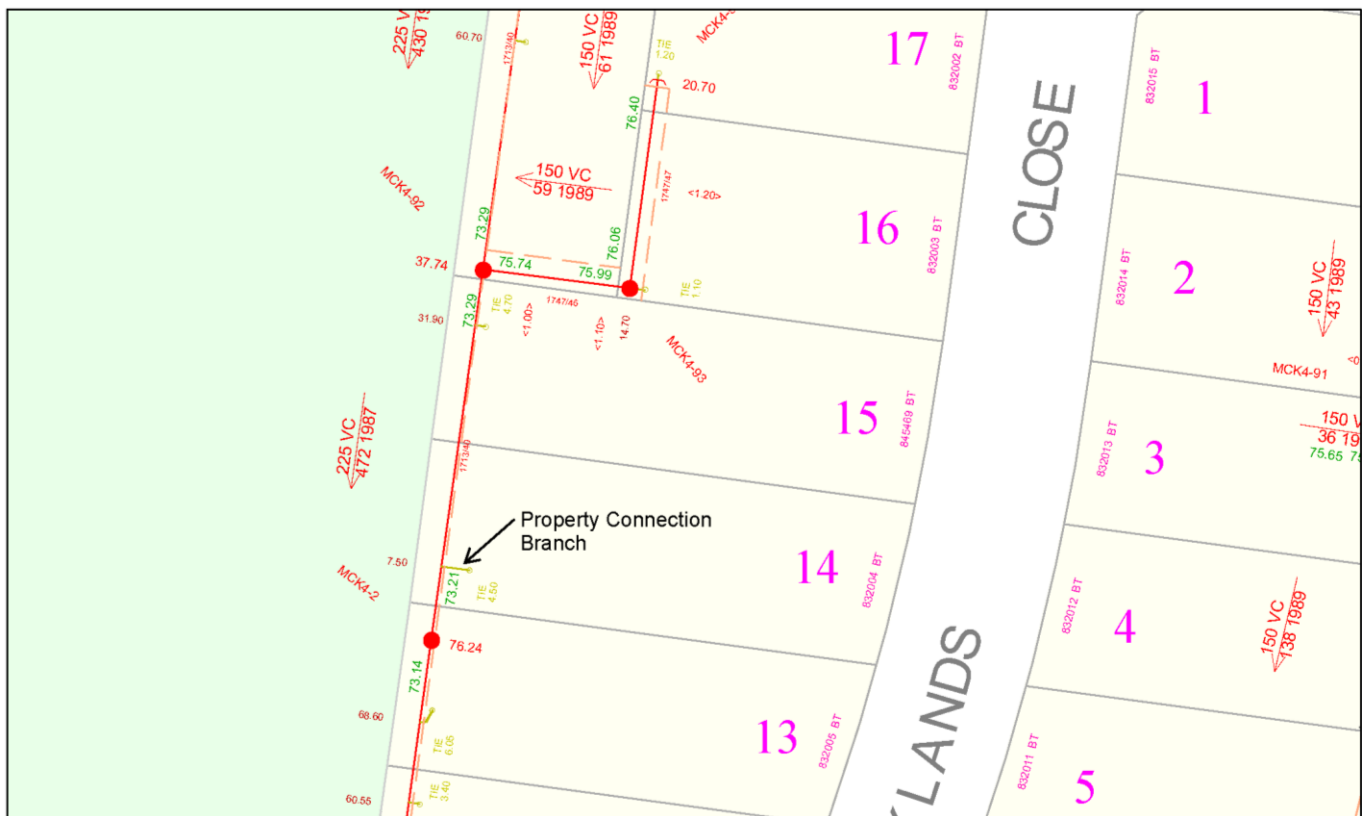
The point where the water corporation's sewer pipe connects to the customer's private plumbing is usually located:

- at the Inspection Opening (I.O.) or up to one metre from the property boundary (whichever is less) when the sewer pipe is located outside the property, or
- at the I.O. or up to one metre from the sewer main (whichever is less) when the sewer main is located inside the property, or
- within one metre outside the property in the road reserve if a structure is built on the boundary or in a neighbouring property if you are on combined plumbing. In this case, the I.O. could be above or below ground.

Works over property connection branches servicing multiple properties or adjacent properties (with the exception of retaining walls) are not allowed as it is too high risk for the water corporation if something goes wrong.

Similarly, works within one metre of property connection branches that are more than 3.5 metres deep are generally not allowed.

Figure 10: Sewer connection branch-asset plan



## 5.5. Sewer rising mains and pressure sewers

These are pipes that transfer sewage under pressure from a pumping system.

You are not allowed to build a structure over rising mains or pressure sewers.

### NOTE:

The relevant water corporation will assess what could happen if the sewer rising main bursts or fails, to decide if the proposed work need a larger clearance than one metre. Please contact the relevant water corporation at the design stage to find out the requirements.

## 5.6. Pressure sewer systems

Sewer systems where the property's internal sewer drain connects to a pump well in the ground with a pump. The waste is then pumped to the pressure sewer pipe, usually in the street (as shown in Figure 11 below).

You cannot build a structure over any pressure sewer components and the water authority needs to have 24 hour access to its assets, with nothing in the way.

As these systems are a little more complex, there are specific guidelines for building works near them.

For pressure sewer tanks, the proposed works must:

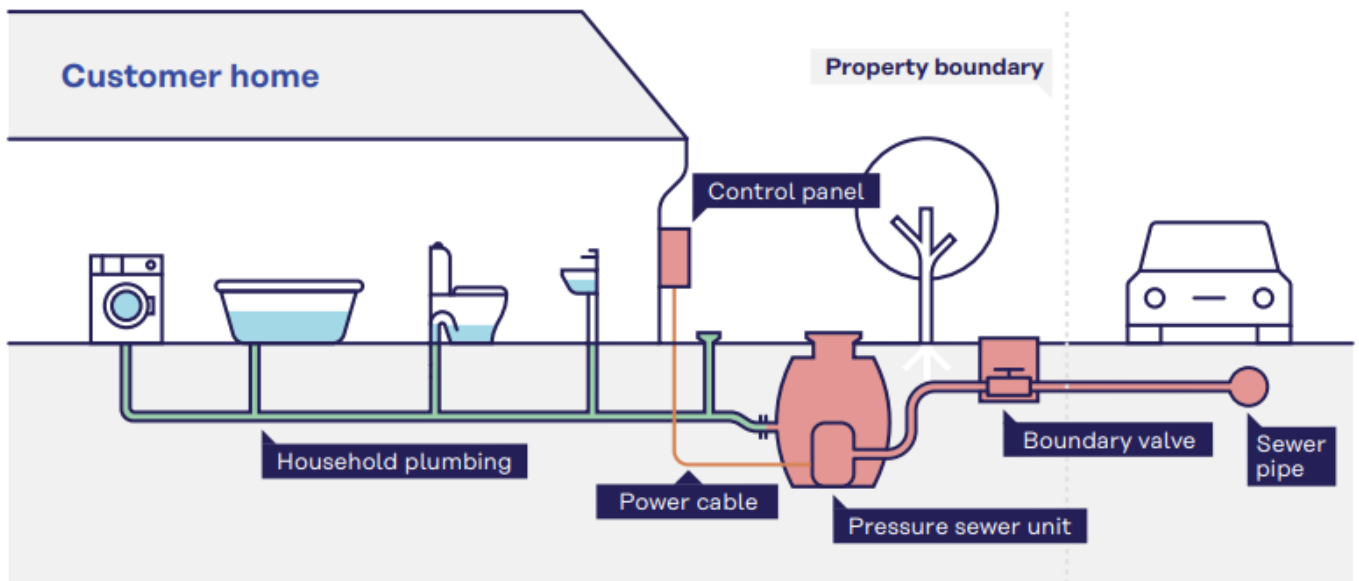
- have a 2 metre horizontal clearance from the outside edge of the pressure sewer tank cover to any existing structure/building or footing/foundation
- have footings/foundations that extend with a minimum depth to the angle of repose to the invert level of the pressure sewer tank, to ensure that no additional load will be place on the sewer tank by the new structure/building
- have a 3 metre horizontal clearance from any opening window or door
- have a 500mm horizontal clearance from the outside edge of the pressure sewer tank cover to the property boundary line



- make sure the pressure sewer tank level stays 75mm above the new surface level so that no ground water seeps into the tank
- make sure there are no landscaping works over the pressure tank lid.

Figure 11: Pressure sewer system components

- Water Authority pays for installs, owns and maintains this equipment
- Customer pays for, owns and maintains household plumbing



Household plumbing	Pressure sewer unit	Boundary valve	Control panel
Transfers wastewater from your house to the pressure sewer unit. The property owner is responsible for maintaining this plumbing.	An underground storage tank containing a pump and level monitors. The tank has extra space to allow for power outages.	Stops waste water re-entering the property. Allows the property to be isolated for maintenance.	A small telecomms box mounted to the wall of the house containing controls and alarms for the pressure sewer unit.

**NOTE:**

Pressure sewer tanks can only be accessed, altered, or maintained by an authorised team member from the relevant water corporation.

For the discharge line (pressure property connection branch) or property boundary kit there needs to be:

- a 500mm minimum horizontal clearance from the boundary line or structure/ building to the pressure sewer discharge pipe
- no landscaping over the discharge line.

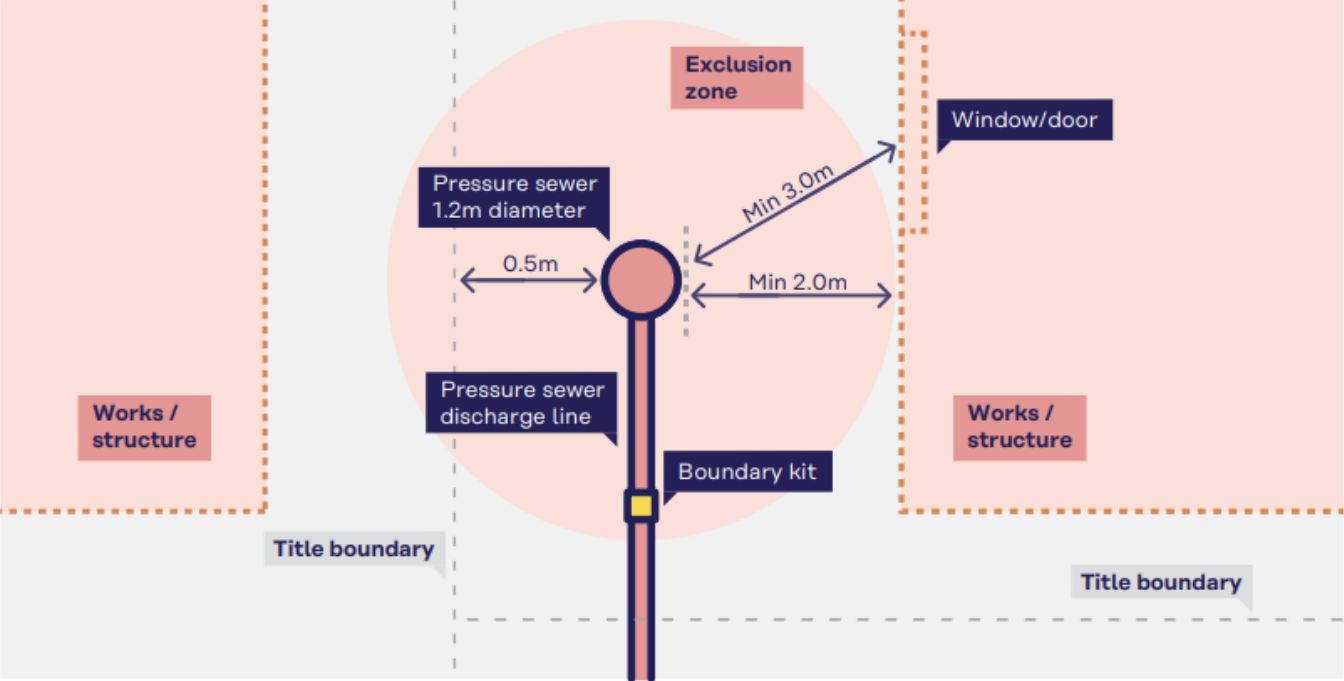
**NOTE:**

You will need to get build over approval for any construction within one metre of any pressure sewer discharge line.

**NOTE:**

If alteration works are needed, these will be completed by the relevant water corporation at the owner's expense.

Figure 12: Clearance required to pressure sewer system components



## 5.7. Sewer vents

A sewer vent is an above ground vent installed on the sewer network to allow airflow in and out of the sewer.

**Figure 13: Sewer vent shaft**



Proposed works next to a sewer vent must have:

- a minimum one metre horizontal clearance from the foundation
- footings, which will vary depending on the type of structure.

**NOTE:**

The relevant water corporation may have additional odour-control requirements for proposed works near vents. If works are proposed near a sewer vent, please contact the relevant water corporation for more information.

## 5.8. Water mains

A water main or pipe is a pipeline used to carry either drinking water or recycled water to customers. Water mains operate under pressure, so it is not permitted to do works over a water main.

Figure 14: Drinking water asset plan

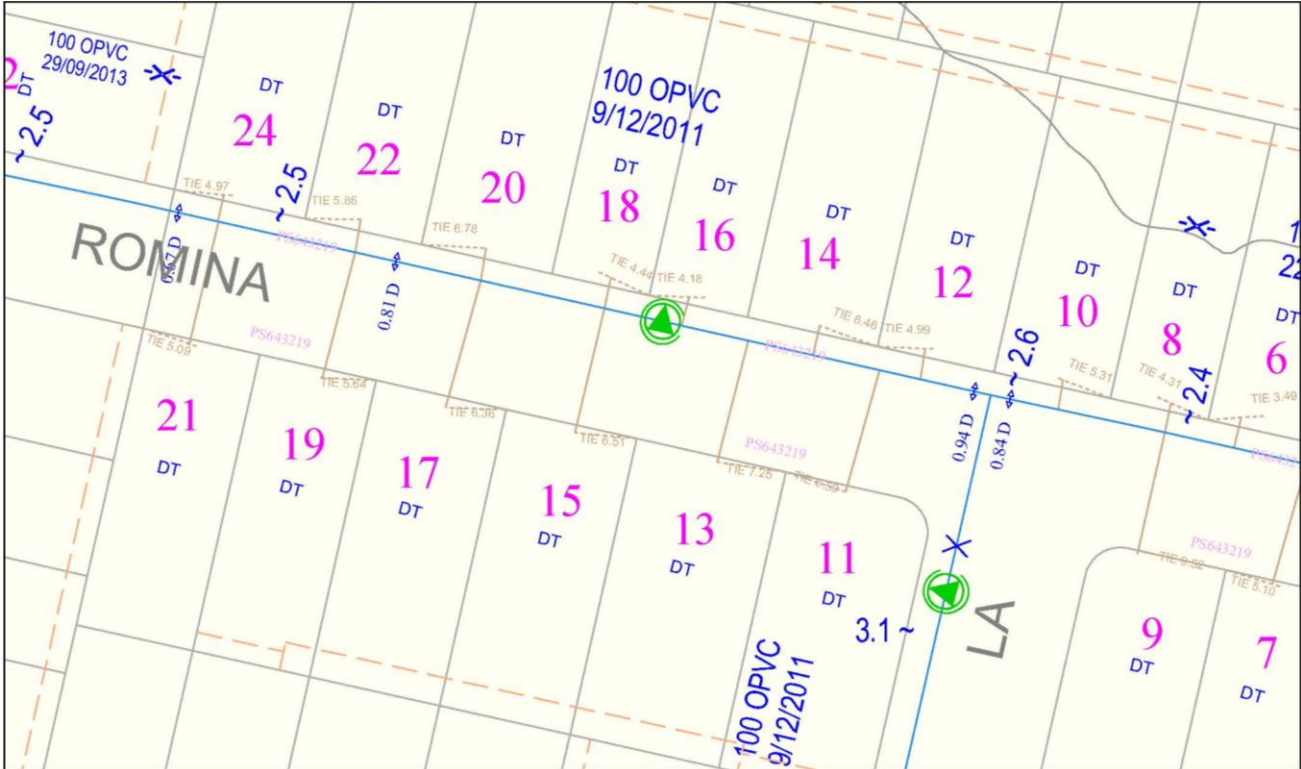
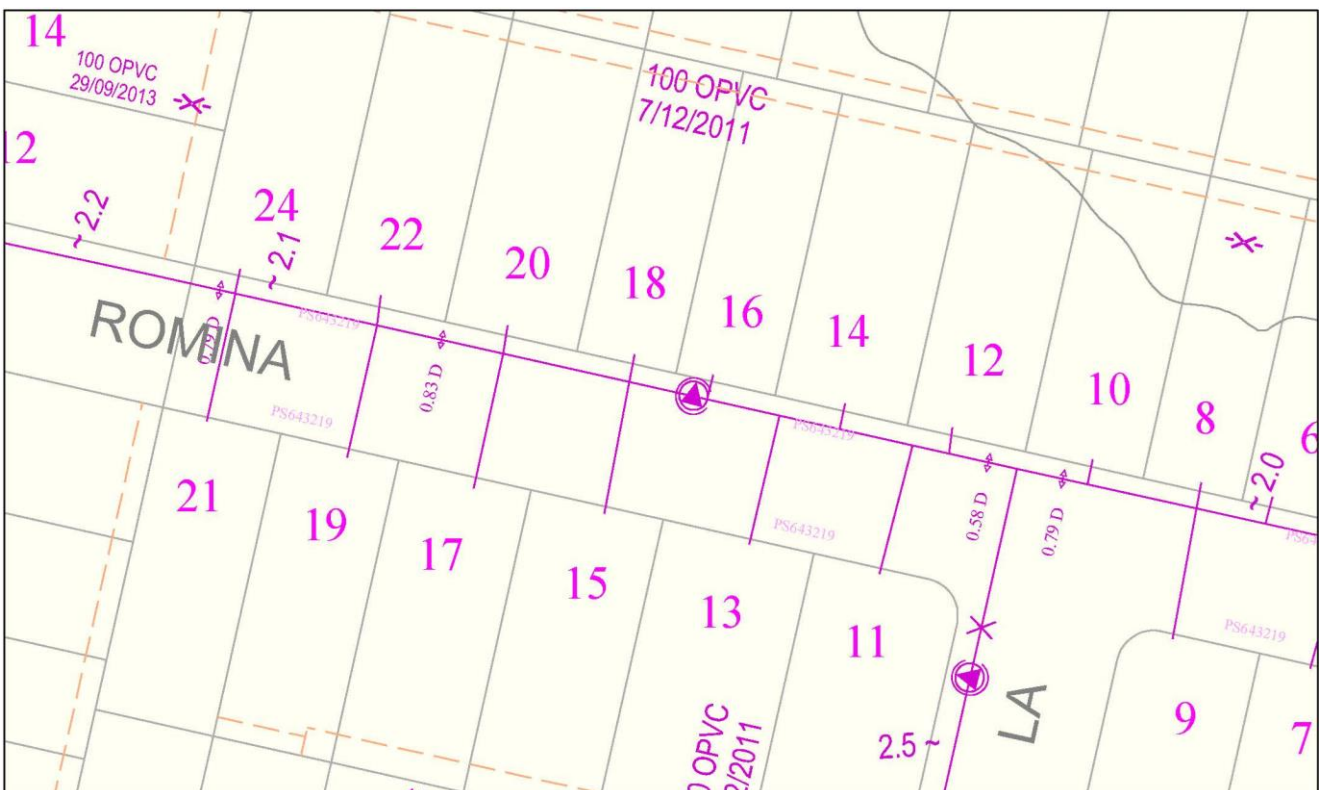


Figure 15: Recycled water asset plan



## 6. Structures/Works

If a structure is proposed to be built or placed within one metre of any water corporation asset as shown on the asset plan, the asset's actual location may need to be proved. This is needed because existing fences, for example, may not be located as per title boundaries. Please contact the relevant water corporation for more information about locating assets.

**NOTE:**

Driven piles are not permitted for foundations/footings located near water corporation assets.

The water corporation must have 24-hour unobstructed access to assets. This means there cannot be anything blocking access to the assets at any time.

Table 1 shows the height clearance needed where noted in this document, such as:

- Garages or carports, which are permitted over pipes
- Balconies, eaves and canopies over pipes or maintenance holes.

Table 1: Height clearance – height clearance is taken to be height of the walls	
Depth to invert of sewer main	Minimum height clearance above floor level
Less than 2.7	2.1m or depth of sewer main whichever is greater.
2.7m to 3.5m	2.7m
Greater than 3.5m	1.5 times the sewer depth for balconies, canopies and eaves. Construction not allowed for other structure types.

## 6.1. Residential

### 6.1.1. Habitable structures

Residences / habitable structures are not allowed to be constructed over water corporation assets.

Item	Asset	Criteria
A	<ul style="list-style-type: none"> <li>• Sewer mains up to and including 225mm diameter and less than 3.5 metre deep</li> <li>• Property connection branch less than 3.5 metre deep</li> </ul>	<p>Works <b>adjacent</b> to a sewer main or property connection branch must have:</p> <ul style="list-style-type: none"> <li>• A minimum 600mm horizontal clearance from the outside edge of the sewer main or property connection branch</li> <li>• Footings/foundations are required to extend to a minimum depth to the angle of repose to the invert level of the sewer main, to make sure that no additional load will be placed on the sewer by the structure.</li> </ul>
B	<ul style="list-style-type: none"> <li>• Sewer main greater than 3.5 metre deep</li> <li>• Property connection branch greater than 3.5 metre deep</li> <li>• Sewer main greater than 225mm diameter</li> </ul>	<p>Works <b>adjacent</b> to sewer mains or property connection branches greater than 3.5 metres deep must have:</p> <ul style="list-style-type: none"> <li>• a minimum one metre horizontal clearance from the outside edge of the sewer main and property connection branch.</li> <li>• footings/foundations are required to extend to a minimum depth to the angle of repose to the invert level of the sewer main, to make sure that no additional load will be placed on the sewer by the structure.</li> </ul> <p>NOTE: In some cases, the water company may require an increased clearance up to the full width of the easement if a larger clearance is needed.</p>
C	Maintenance hole	<p>Works <b>adjacent</b> to a maintenance hole must have:</p> <ul style="list-style-type: none"> <li>• 1.5 metre horizontal clearance from the centreline of the sewer main</li> <li>• footings/foundations are required to extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> <li>• maintenance hole cover levels are required to match surface levels. If alteration works are needed these will be completed by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance holes can only be opened by persons authorised by the water corporation.</p>
D	Maintenance chambers or maintenance shafts	<p>Works <b>adjacent</b> to a maintenance chamber or maintenance shaft must have:</p> <ul style="list-style-type: none"> <li>• a minimum one metre horizontal clearance from the centreline of the sewer main</li> <li>• footings/foundations are required to extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the maintenance shaft by the structure</li> <li>• maintenance shaft cover levels are required to match new surface levels. If alteration works are needed these will be completed by the relevant water corporation at the applicant's expense.</li> </ul>

Item	Asset	Criteria
		<p>NOTE: Maintenance chambers and maintenance shafts can only be opened by persons authorised by the water corporation.</p>
E	<p><b>Water mains, sewer rising mains, sewer vacuum lines and pressure sewers</b></p>	<p>The water corporation will assess what could happen if one of these assets bursts or fails, and may ask for a larger clearance to reduce this risk. The applicant needs to contact the relevant water corporation at the design stage to find out the requirements.</p>
F	<p><b>Easements reserved for sewerage/water purposes containing no assets</b></p>	<ul style="list-style-type: none"> <li>• If the water corporation intends to use the easement for water or sewer assets in the future, you may not receive approval to build over or adjacent to the easement</li> <li>• Minimum horizontal clearances from the outside edge of an asset within an adjoining property will be required. This will be assessed on a case-by-case basis.</li> </ul> <p>NOTE: If an easement isn't needed by the water corporation anymore, the water corporation may consider an application to remove or change the easement.</p>

Figure 16: Residential habitable structure – sewer main less than 3.5 metres deep

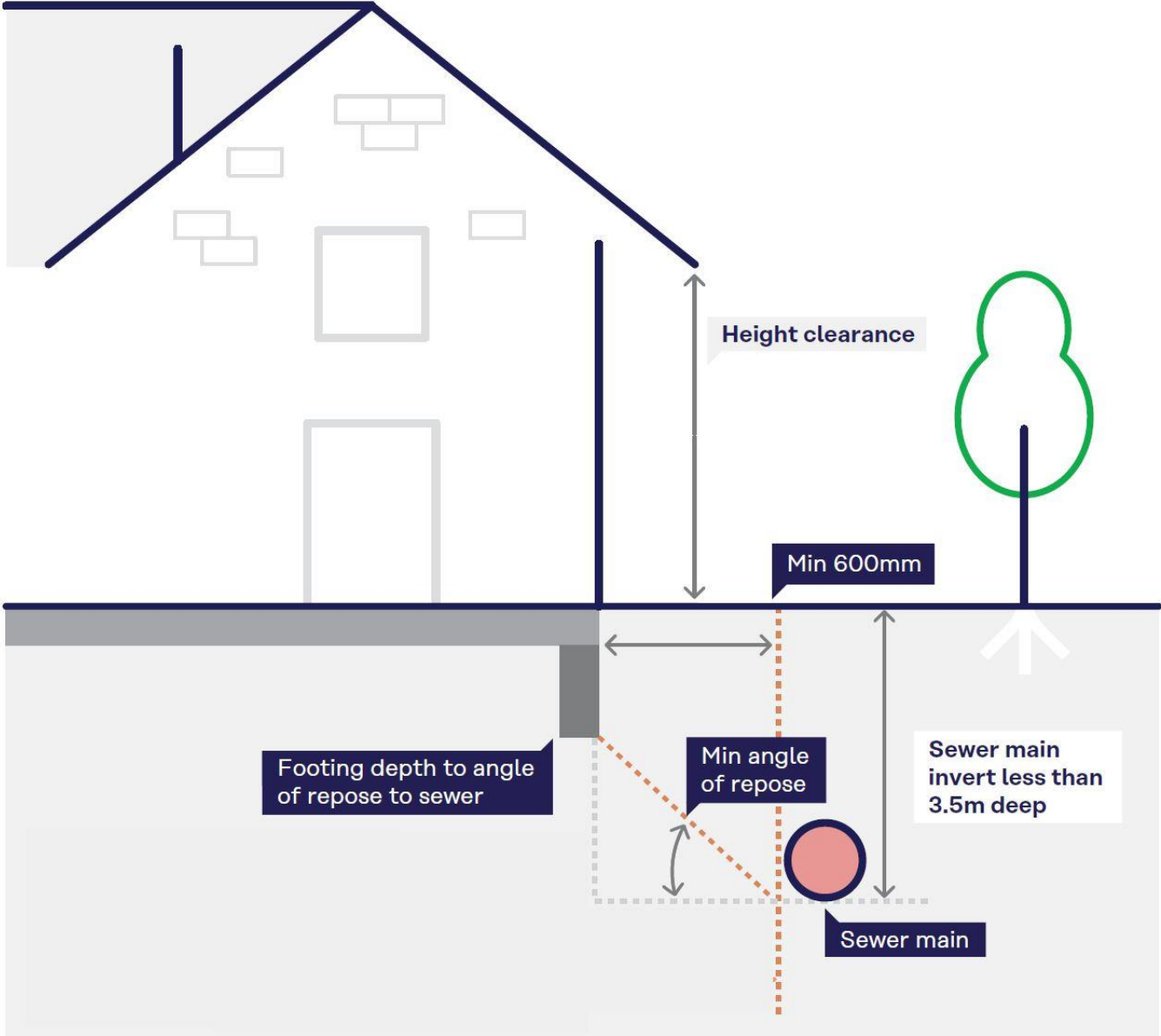
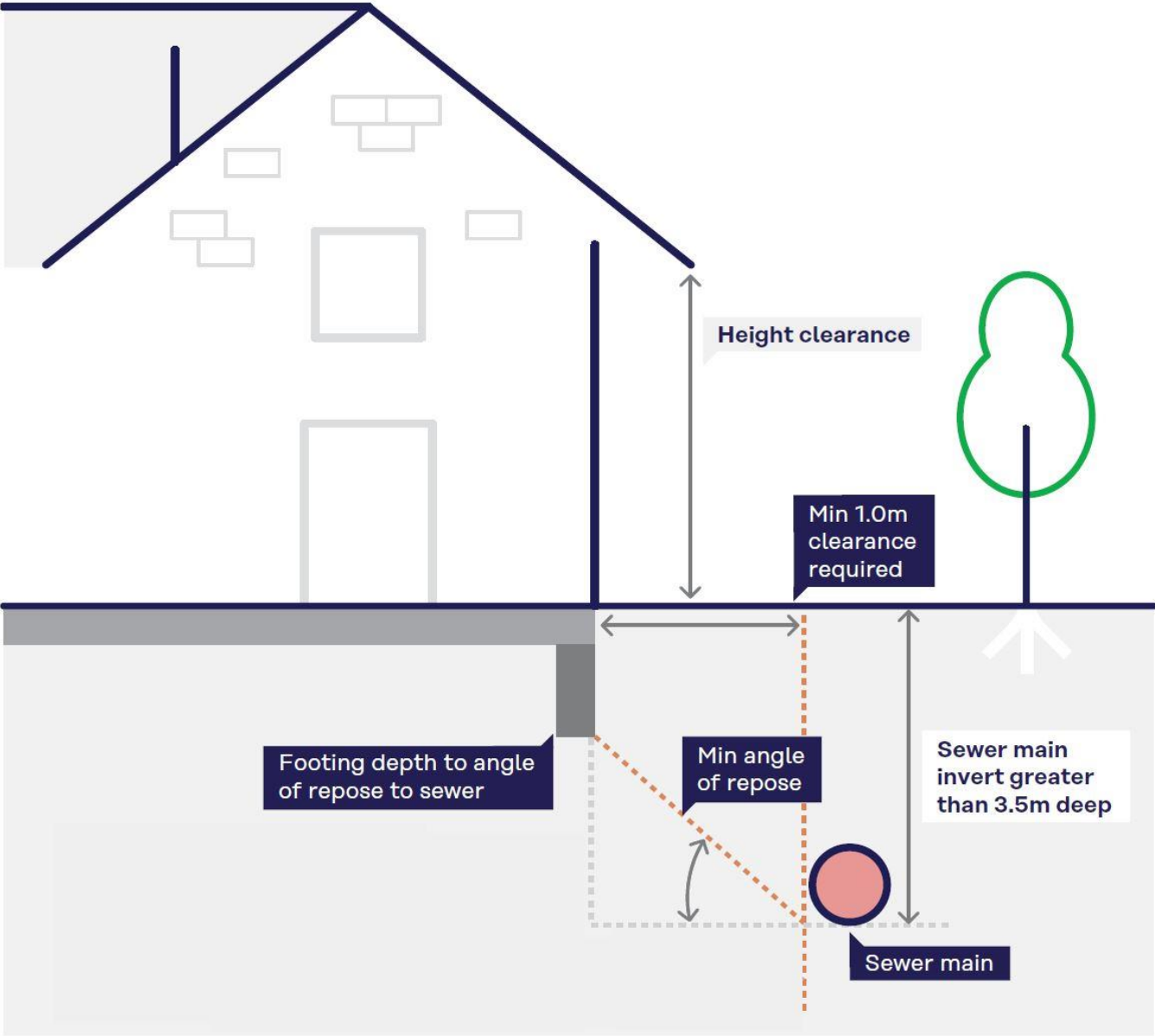




Figure 17: Sewer main invert greater than 3.5 metres – habitable structure



## 6.1.2. Basements

**Basements cannot be built over sewer mains.**

Item	Asset	Criteria
A	<ul style="list-style-type: none"> <li>Sewer mains</li> <li>Property connection branch</li> </ul>	<p>Works <b>adjacent</b> to sewer mains and property connection branches must have:</p> <ul style="list-style-type: none"> <li>a minimum one metre horizontal clearance from the outside edge of the sewer main and property connection branch.</li> <li>footings/foundation are required to extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> </ul>
B	<b>Maintenance hole</b>	<p>Works <b>adjacent</b> to a maintenance hole must have:</p> <ul style="list-style-type: none"> <li>1.5 metre horizontal clearance from the centreline of the sewer main</li> <li>footings/foundations are required to extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure</li> <li>maintenance hole cover levels are required to match surface levels. If alteration works are needed these will be arranged by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance holes can only be opened by persons authorised by the water corporation.</p>
C	<b>Maintenance chambers or maintenance shafts</b>	<p>Works adjacent to a maintenance chamber or maintenance shaft must have:</p> <ul style="list-style-type: none"> <li>a minimum one metre horizontal clearance from the centreline of the sewer main</li> <li>footings/foundations are required to extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the maintenance shaft by the structure</li> <li>maintenance shaft cover levels are required to match new surface levels. If alteration works are needed these will be arranged by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance chambers and maintenance shafts can only be opened by persons authorised by the water corporation.</p>
D	<b>Water mains, sewer rising mains, sewer vacuum lines and pressure sewers</b>	<p>The water corporation will assess what could happen if one of these assets bursts or fails and may ask for a larger clearance to reduce this risk. The applicant needs to contact the relevant water corporation at the design stage to find out the requirements.</p>
E	<b>Easements reserved for sewerage/water purposes containing no assets</b>	<ul style="list-style-type: none"> <li>If the water corporation intends to use the easement for water or sewer assets in the future, you may not receive approval to build over or adjacent to the easement</li> <li>Minimum horizontal clearances from the outside edge of an asset within an adjoining property will be required. This will be assessed on a case-by-case basis.</li> </ul>

Item	Asset	Criteria
		<p><b>NOTE:</b> If an easement isn't needed by the water corporation anymore, the water corporation may consider an application to remove or change the easement.</p>



### 6.1.3. Garages, carports, decking and sheds

#### Non lightweight (i.e., not meeting the definition of lightweight)

Item	Asset	Criteria
A	Sewer mains up to and including 225mm diameter and less than 3.5 metres deep (excluding concrete sewers)	<p>Works <b>adjacent</b> to sewer main must have:</p> <ul style="list-style-type: none"> <li>• A minimum 600mm horizontal clearance from the outside edge of the sewer main</li> <li>• footings/foundations are required extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> </ul> <p>Works <b>traversing</b> a sewer main must:</p> <ul style="list-style-type: none"> <li>• measure no more than 8 metres long</li> <li>• have footings/foundations which extend a minimum depth to the angle of repose to the invert level of the sewer</li> <li>• have footings/ foundations with at least a 600mm horizontal clearance to the sewer main</li> <li>• have foundations which have a minimum 600mm vertical clearance to the sewer main</li> <li>• ensure any concrete floors are an infill slab only, to ensure the structure will not be impacted if it needs to be removed</li> <li>• ensure that any construction joints/saw cuts included in the design are provided at maximum centres of 1.2 metres and will be centrally located over the sewer to identify the removable section</li> <li>• meet the height clearance required in Table 1 on page 18</li> <li>• include a structurally independent roof if attached to another structure. An engineer’s plans must be submitted showing the independence of the roof</li> <li>• not have plumbing fixtures, fixed storage/shelving or internal walls that restrict access if they will be installed within a garage over a sewer main or easement</li> <li>• consider that an inspection of the pipes condition, via CCTV, may be required at the applicant’s expense before getting final approval. An inspection will be needed if the pipe was constructed more than 10 years ago and the material is not UPVC or Polyethylene. If the CCTV inspection finds that the asset needs some maintenance from the water corporation, the proposed works approval may be delayed.</li> </ul> <p><b>Cantilevered first storey over a garage</b></p> <p>If the works propose to have a first storey partially encroach over a garage, your application will need to meet the following requirements:</p> <ul style="list-style-type: none"> <li>• The works cannot transfer loading (weight) from the first storey area to the outside ground floor footing/foundation of the garage</li> <li>• A structural engineer’s report/plans must be provided confirming the above</li> <li>• The first storey must maintain a minimum 600mm horizontal clearance from the outside edge of the sewer main (see diagram)</li> <li>• The height clearance outlined in Table 1 on page 18 is required, unless demountable.</li> </ul> <p>Please refer to the height specifications table in <a href="#">Section 6</a>.</p>

Item	Asset	Criteria
B	Concrete sewer mains less than 3.5 metres deep	<p><b>Works over concrete sewer mains are not allowed. This is because concrete sewer mains have a higher risk of failure.</b></p> <p>Works <b>adjacent</b> to a concrete sewer main must have:</p> <ul style="list-style-type: none"> <li>• a minimum 600mm horizontal clearance from the outside edge of the sewer main</li> <li>• Footings/foundations which extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> </ul> <p>NOTE: In some cases, additional clearance may be required. If so, the water corporation can request an increased clearance up to the full width of the easement.</p> <p>NOTE: Applications for works traversing a concrete sewer main may be considered on a case-by-case basis if the concrete sewers can be relined from maintenance hole to maintenance hole. You can request an inspection to see if this is possible. If this is possible, both the works and a CCTV inspection would be completed at the applicant's expense.</p>
C	<ul style="list-style-type: none"> <li>• Sewer main greater than 3.5 metres deep</li> <li>• Property connection branch greater than 3.5 metres deep</li> <li>• Sewer main greater than 225mm diameter</li> </ul>	<p><b>Works over sewer mains and property connection branches greater than 3.5 metres deep are generally not allowed.</b></p> <p>Works <b>adjacent</b> to sewer mains and property connection branches greater than 3.5 metres deep must have:</p> <ul style="list-style-type: none"> <li>• a one metre horizontal clearance from the outside edge of the sewer main and property connection branch.</li> <li>• Footings/foundations which extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> </ul> <p>NOTE: In some cases, additional clearance may be required. If so, the water corporation can request an increased clearance up to the full width of the easement.</p> <p>NOTE: Greater Western Water will consider works over a sewer main deeper than 3.5 metres on a case-by-case basis. In these circumstances, an assessment is required. Lodging an application does not guarantee the works will be allowed.</p>
D	Property connection branch servicing an adjoining property less 3.5 metres deep	<p><b>Works over property connection branches which service adjoining properties are not allowed. These works would come with a high risk of impacting the delivery of these services to your neighbours.</b></p> <p>Works <b>adjacent</b> to an adjoining property connection branch must have:</p> <ul style="list-style-type: none"> <li>• a minimum 600mm horizontal clearance between the proposed works/foundation and the property connection branch</li> <li>• footings/foundations which extend a minimum depth to the angle of repose to the invert level of the property connection branch to ensure that no additional load will be placed on the property connection branch by the structure.</li> </ul>

Item	Asset	Criteria
E	Property connection branch servicing own property less 3.5 metres deep	<p><b>You cannot build over your own property’s connection branch if this branch will be servicing more than one property.</b></p> <p>Works <b>adjacent</b> to a property connection branch must have:</p> <ul style="list-style-type: none"> <li>• a minimum 600mm horizontal clearance between the proposed works/foundations and the property connection branch</li> <li>• footings/foundations which extend a minimum depth to the angle of repose to the invert level of the property connection branch to ensure that no additional load will be placed on the property connection branch by the structure.</li> </ul> <p>Works <b>traversing</b> a property connection branch must have:</p> <ul style="list-style-type: none"> <li>• foundations traversing the property connection branch which are a minimum of 600mm from the property connection branch</li> <li>• foundations traversing the property connection branch which maintain a minimum 600mm vertical clearance</li> <li>• footings/foundations which extend a minimum depth to the angle of repose to the invert level of the property connection branch to ensure that no additional load will be placed on the property connection branch by the structure</li> <li>• any concrete floors to be made of an infill slab only, so if the floor had to be removed, it would not affect the integrity of the structure</li> <li>• the height clearance outlined in Table 1 on page 18</li> <li>• an inspection opening (IO) installed and brought to the surface if the property connection branch ends within the structure. The water corporation may require the branch to be cutback clear of the structure at the applicant’s expense</li> <li>• a 1.2 metre square removeable panel within the decking, if you are building decking that traverses a sewer connection branch. The panel needs to allow access at the spot where the deck traverses the property connection branch for access. See figure 23 below.</li> </ul> <p>no plumbing fixtures, fixed storage/shelving or internal walls that restrict access installed within a garage over a property connection branch or easement.</p>
F	Maintenance hole	<p><b>Works over maintenance holes are not allowed</b></p> <p>Works <b>adjacent</b> to a maintenance hole must have:</p> <ul style="list-style-type: none"> <li>• a 1.5 metre horizontal clearance from the centreline of the sewer main</li> <li>• footings/foundations which extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure</li> <li>• Maintenance hole cover levels which match surface levels. If alteration works are needed these will be arranged by the relevant water corporation at the applicant’s expense.</li> </ul> <p>NOTE: Maintenance holes can only be opened by persons authorised by the water corporation</p>
G	Maintenance chamber or maintenance shaft	<p><b>Works over maintenance chambers and maintenance shafts are not allowed</b></p> <p>Works <b>adjacent</b> to a maintenance shaft must have:</p>

Item	Asset	Criteria
		<ul style="list-style-type: none"> <li>• a one metre horizontal clearance from the centreline of the sewer main</li> <li>• footings/foundations which extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the maintenance shaft by the structure</li> <li>• maintenance shaft cover levels which match new surface levels. If alteration works are needed these will be arranged by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance shafts can only be opened by persons authorised by the water corporation.</p>
H	<b>Water mains, sewer rising mains, vacuum lines and pressure sewers</b>	<p><b>Structures over water mains, sewer rising mains, vacuum lines and pressure mains aren't allowed.</b></p> <p>NOTE: The relevant water corporation will assess the potential impact of a failed water main, sewer rising main, vacuum line and pressure sewer on individual developments and may ask for clearances of more than one metre. You'll need to contact the relevant water corporation during the design stage to confirm the requirements.</p>
I	<b>Easements reserved for sewerage/water purposes containing no assets</b>	<ul style="list-style-type: none"> <li>• If the water corporation intends to use the easement for water or sewer assets in the future, you may not receive approval to build over or adjacent to the easement</li> <li>• Minimum horizontal clearances from the outside edge of an asset within an adjoining property will be required. This will be assessed on a case-by-case basis.</li> </ul> <p>NOTE: Where an easement is no longer required for the purpose of providing sewer and/or water facilities to future developments, the relevant water corporation may consider an application to remove or amend the easement.</p>

Figure 18: Adjoining property branches – residential

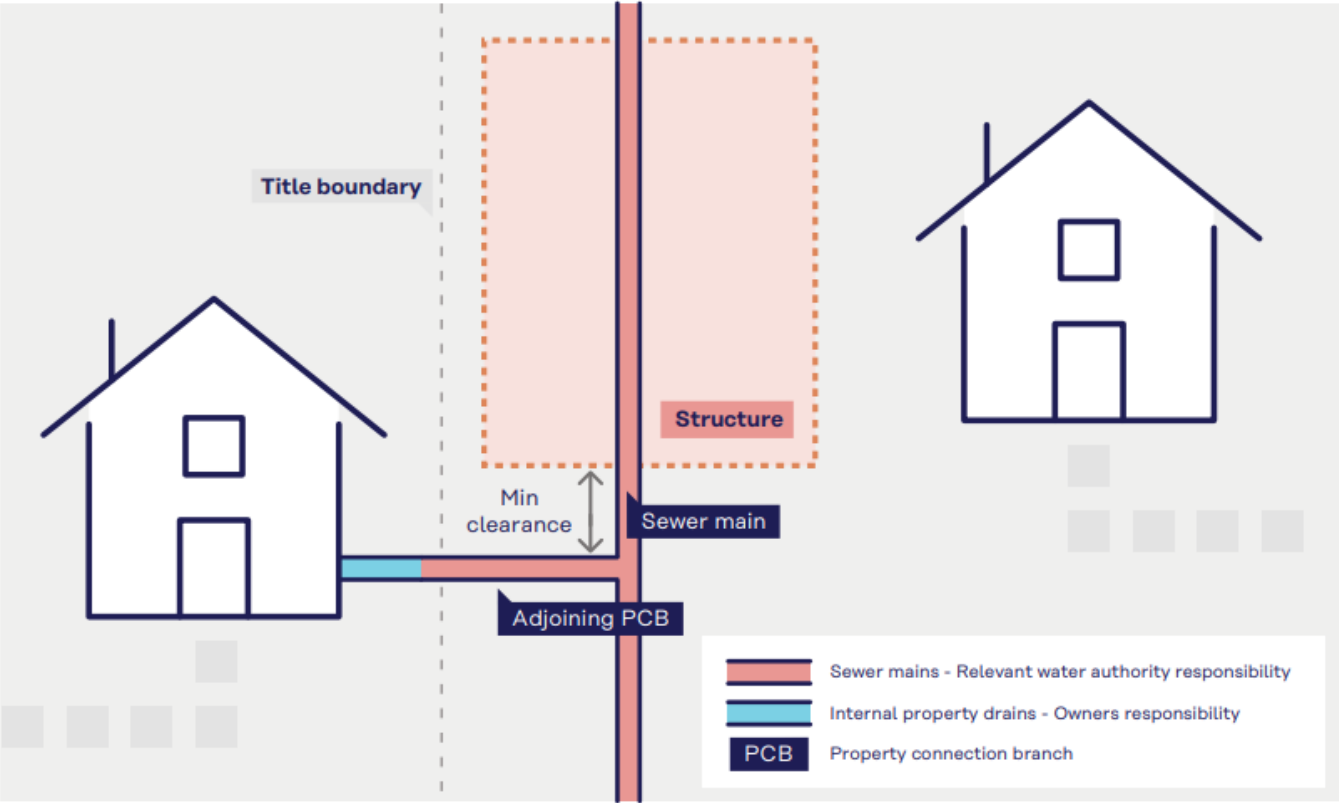




Figure 19: Garage traversing sewer main

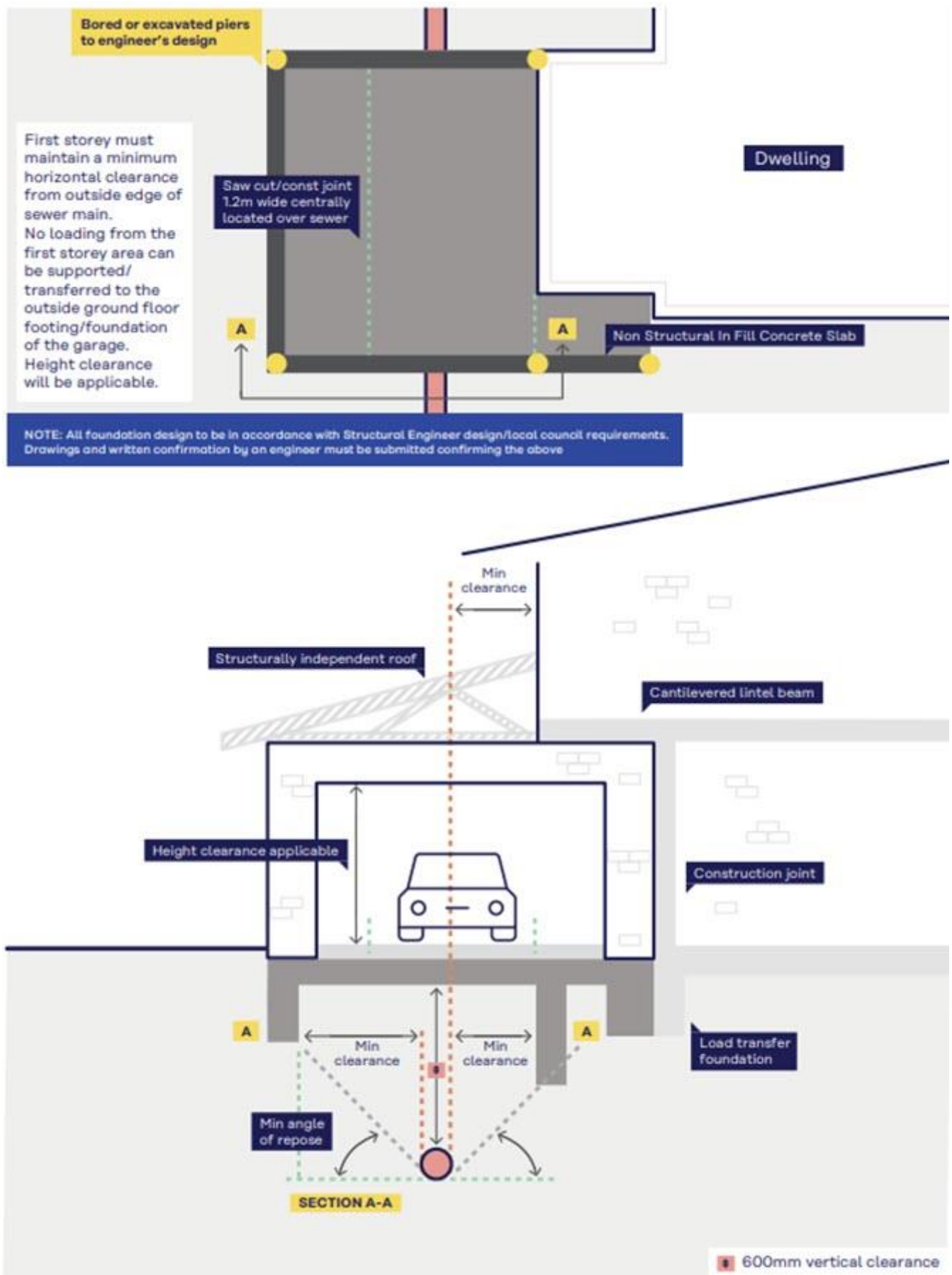


Figure 20: Brick/timber – non demountable

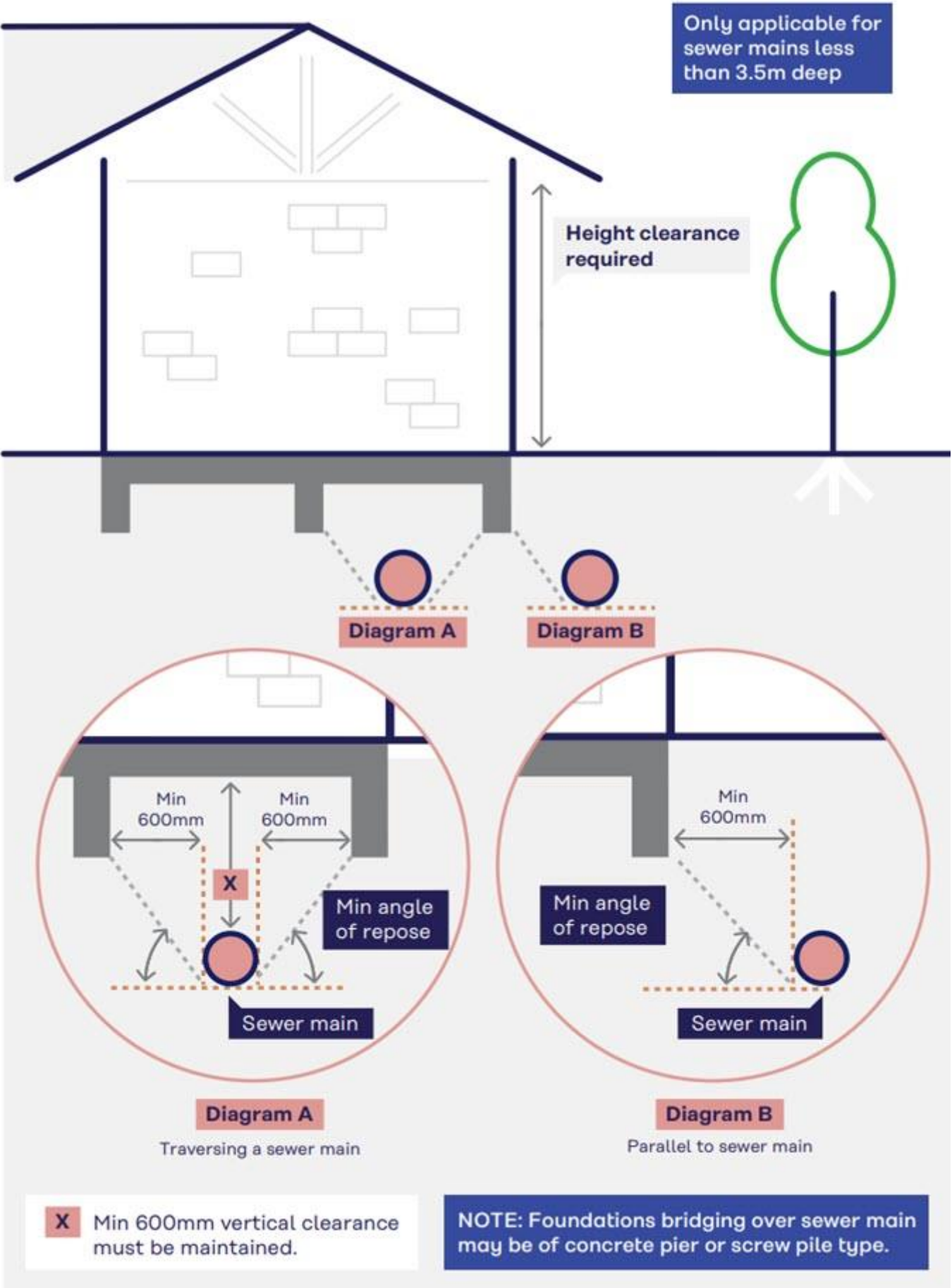
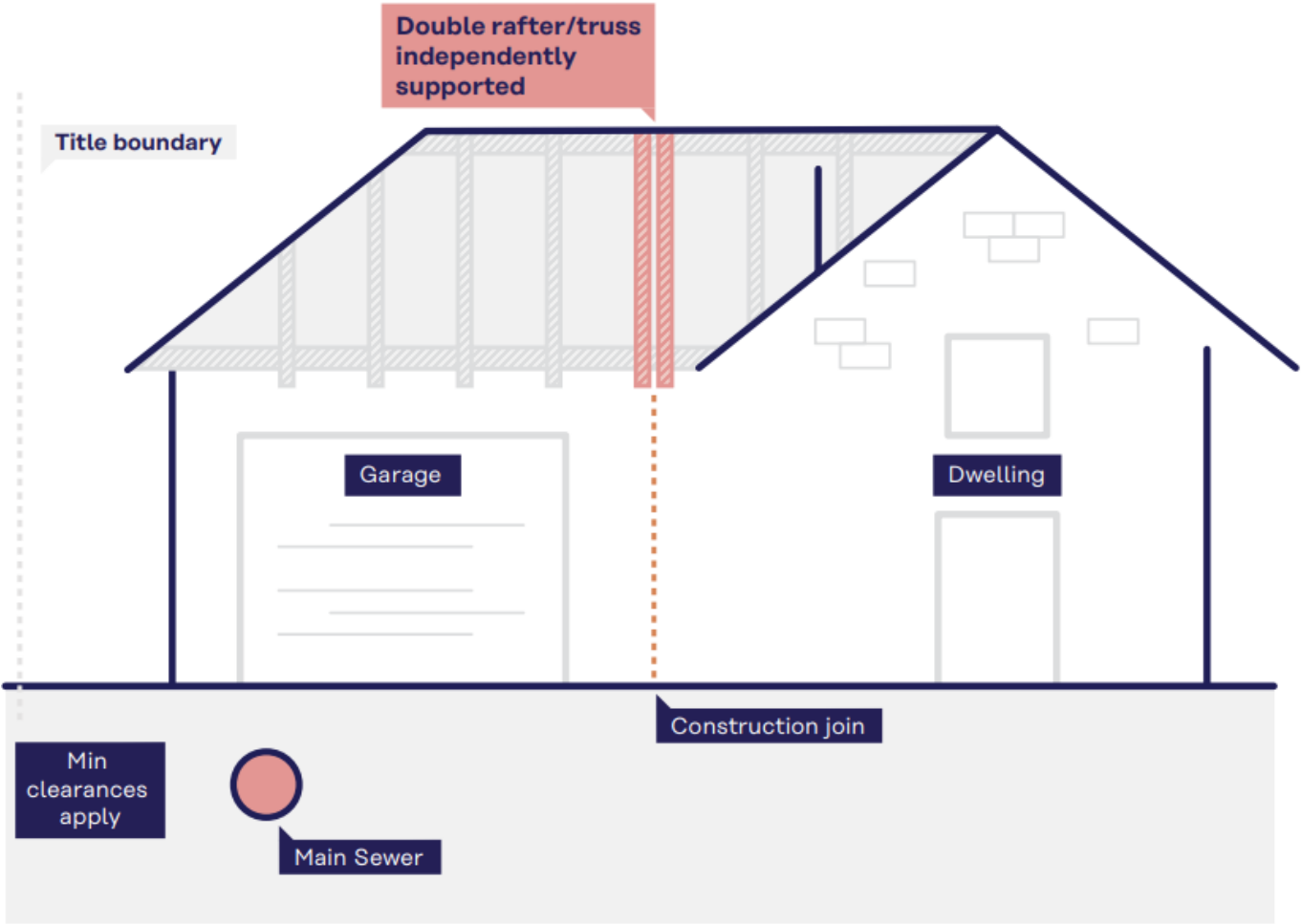


Figure 21: Structurally independent roofing



#### 6.1.4. Lightweight structures (refer to definitions)

Including garages, carports, sheds, pergolas, verandas, gazebos, sails, decking

Note: Where pad footings are not structurally acceptable, the structure cannot be classed as a lightweight structure. Refer section 6.1.3.

Item	Asset	Criteria
A	Sewer mains up to and including 225mm diameter and less than 3.5 metres deep (excluding concrete sewers)	<p>Works <b>adjacent</b> to sewer main must ensure:</p> <ul style="list-style-type: none"> <li>any footings have a minimum 600mm horizontal clearance from the outside edge of the sewer main</li> <li>that where pad footings are not structurally acceptable, the structure cannot be classed as a lightweight structure. See requirements in section 6.1.3.</li> </ul> <p>NOTE: Lightweight structures &lt;10m<sup>2</sup> with no footings are allowed within 600mm of a sewer main.</p> <p>Works <b>traversing</b> a sewer main must ensure:</p> <ul style="list-style-type: none"> <li>the section of the structure is no more than 8 metres long</li> <li>foundations traversing the sewer main keep a minimum 600mm vertical clearance to the sewer main</li> <li>the concrete floor is made of an infill slab only, so if it had to be removed, it would not impact the integrity of the structure</li> <li>construction joints/saw cuts included in the design are provided at maximum centres of 1.2 metres, and be centrally located over the sewer to identify the removable section</li> <li>footings have a minimum 600mm horizontal clearance from the outside edge of the sewer main</li> <li>that where pad footings are not structurally acceptable, the structure cannot be classed as a lightweight structure. See requirements in section 6.1.3</li> </ul> <p>a structurally independent roof is provided when attached to another structure. Engineers plans must be submitted showing the independence of the roof.</p>
B	Concrete sewer main less than 3.5 metres deep	<p><b>Works over concrete sewer mains are not allowed as concrete sewer mains have a higher risk of failure.</b></p> <p>Works <b>adjacent</b> to a concrete sewer main must ensure:</p> <ul style="list-style-type: none"> <li>footings have a minimum 600mm horizontal clearance from the outside edge of the sewer main.</li> <li>that where pad footings are not structurally acceptable, the structure can't be classed as a lightweight structure. See requirements in section 6.1.3.</li> </ul> <p>NOTE: Lightweight structures &lt;10m<sup>2</sup> with no footings are allowed within 600mm of a sewer main. Structures traversing a concrete sewer main may be considered on a case-by-case basis where concrete sewers can be relined from maintenance hole to maintenance hole, at the applicant's expense. You can request an inspection to see if this is possible. If this is possible, a CCTV inspection would be completed at the applicant's expense.</p>

Item	Asset	Criteria
C	<ul style="list-style-type: none"> <li>• Sewer main greater than 3.5 metres deep</li> <li>• Property connection branch greater than 3.5 metres deep</li> <li>• Sewer main greater than 225mm diameter</li> </ul>	<p><b>Works over sewer mains and property connection branches greater than 3.5 metres deep are not usually allowed. A one metre horizontal clearance from the outside edge of the sewer main is required.</b></p> <p>Yarra Valley Water and South East Water will consider lightweight structures less than 10 m<sup>2</sup> with no footings within 600mm of a sewer main.</p> <p>Greater Western Water will consider works over a sewer main deeper than 3.5 metres on a case-by-case basis. In these circumstances, an assessment is required. Submitting an application does not guarantee that the works will be approved.</p>
D	<p><b>Property connection branch servicing an adjoining property less 3.5 metres deep</b></p>	<p>Works over property connection branches servicing adjoining properties are not allowed. These works would come with a high risk of impacting the delivery of these services to your neighbours.</p> <p>Works adjacent to the property connection branch must have : a minimum of 600mm horizontal clearance between the proposed works/foundations and the property connection branch.</p>
E	<p><b>Property connection branch servicing own property less 3.5 metres deep</b></p>	<p><b>You cannot build over your own property’s connection branch if this branch will be servicing more than one property.</b></p> <p>Works <b>adjacent</b> to the property connection branch must have:</p> <ul style="list-style-type: none"> <li>• a minimum of 600mm horizontal clearance between the proposed works/foundations and the property connection branch.</li> </ul> <p>Works <b>traversing</b> a property connection branch must ensure:</p> <ul style="list-style-type: none"> <li>• there’s a minimum of 600mm horizontal clearance between the proposed works/foundations and the property connection branch</li> <li>• there’ s a 600 mm vertical clearance to the sewer main if the foundations traverse the sewer main</li> <li>• that any concrete floors are made of an infill slab only, so if it has to be removed, it would not impact the integrity of the structure</li> <li>• construction joints/saw cuts included in the design must be provided at maximum centres of 1.2 metres, and be centrally located over the sewer to identify the removable section</li> <li>• an inspection opening (IO) is installed and brought to the surface if the property connection branch ends within the structure. The water corporation may ask the branch to be cutback clear of the structure at the applicant’s expense</li> <li>• no plumbing fixtures, fixed storage/shelving or internal walls that restrict access are installed within a garage over a sewer main or easement</li> <li>• a structurally independent roof is provided when attached to another structure. Engineers’ plans must be submitted showing the independence of the roof.</li> <li>• a 1.2 metre square removeable panel within the decking is included, if you are building decking that traverses a sewer connection branch. The panel needs to allow access at the spot where the deck traverses the property connection branch for access. See figure 23 below.</li> </ul>
F	<p><b>Maintenance hole</b></p>	<p><b>Works over maintenance holes are not allowed</b></p> <p>Works <b>adjacent</b> to a maintenance hole must have:</p>

Item	Asset	Criteria
		<ul style="list-style-type: none"> <li>• a 1.5 metre horizontal clearance from the centreline of the sewer main</li> <li>• that where pad footings are not structurally acceptable, the structure cannot be classed as a lightweight structure. See requirements in section 6.1.3.</li> <li>• Maintenance hole cover levels which match surface levels. If alteration works are needed these will be arranged by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance holes can only be opened by persons authorised by the water corporation</p>
G	Maintenance chamber or maintenance shaft	<p><b>Works over maintenance chambers and maintenance shafts aren't allowed</b></p> <p>Works <b>adjacent</b> to a maintenance shaft must ensure:</p> <ul style="list-style-type: none"> <li>• there's a minimum one metre horizontal clearance from the centreline of the sewer main</li> <li>• that where pad footings are not structurally acceptable, the structure cannot be classed as a lightweight structure. See requirements in section 6.1.3.</li> <li>• maintenance shaft cover levels match new surface levels. If alteration works are needed, these will be done by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance shafts can only be opened by persons authorised by the water corporation.</p>
H	Water mains, sewer rising mains, vacuum lines and pressure sewers	<p><b>Structures over water mains, sewer rising mains, vacuum lines and pressure sewers are not allowed.</b></p> <p>NOTE: The relevant water corporation will assess the potential impact of a failed water main, sewer rising main, vacuum line and pressure sewer on individual developments and may ask for a clearance of more than one metre. Please contact the relevant water corporation at the design stage to find out the requirements.</p>
I	Easements reserved for sewerage/water purposes containing no assets	<ul style="list-style-type: none"> <li>• If the easement may be needed for future water or sewer development, your works will not be approved.</li> <li>• Minimum horizontal clearances from the outside edge of an asset within an adjoining property will be. This will be assessed on a case-by-case basis.</li> </ul> <p>NOTE: Where this easement is no longer needed for sewer/water purposes the relevant water corporation may consider an application to remove or change the easement.</p>

Figure 22: Demountable lightweight structure

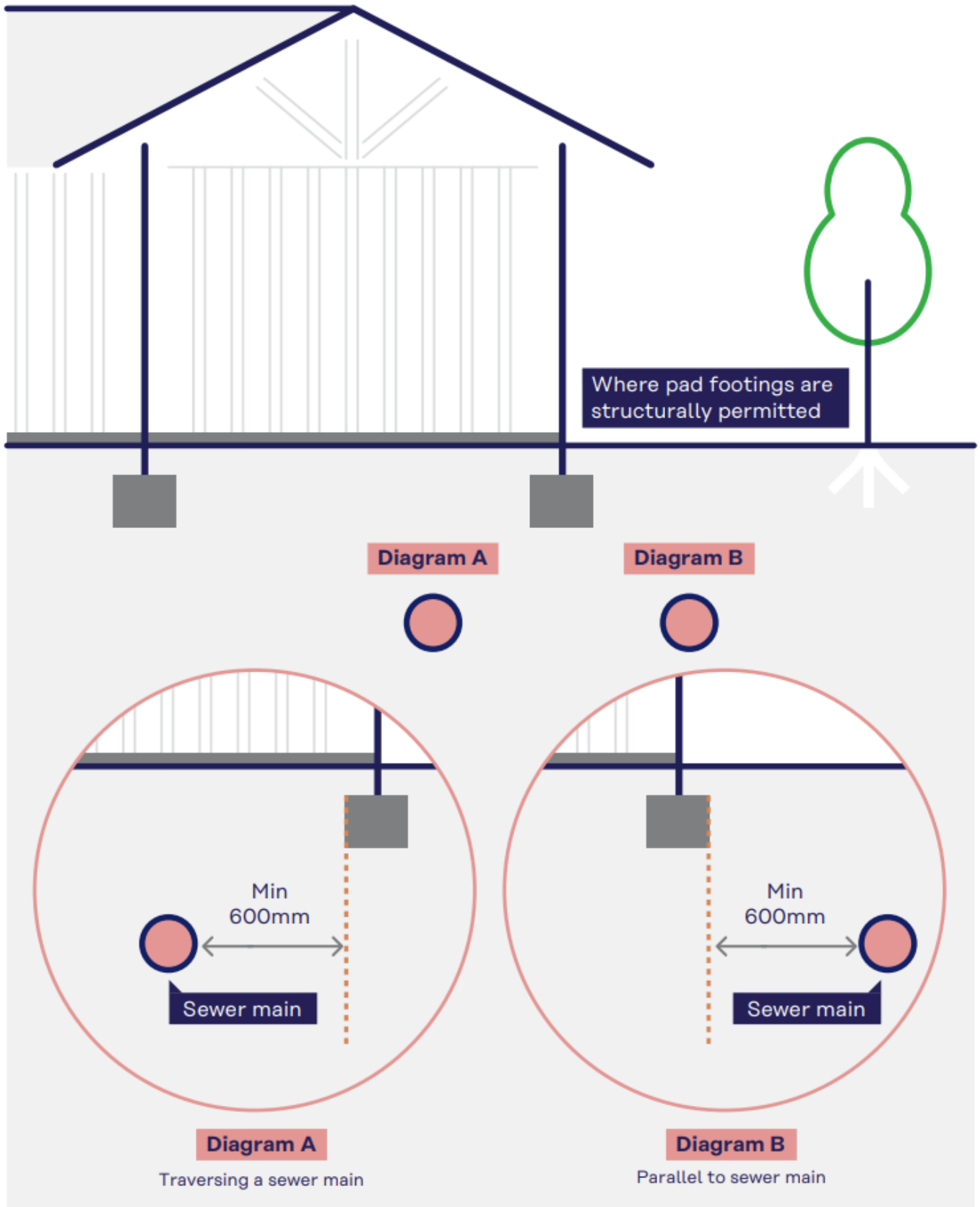
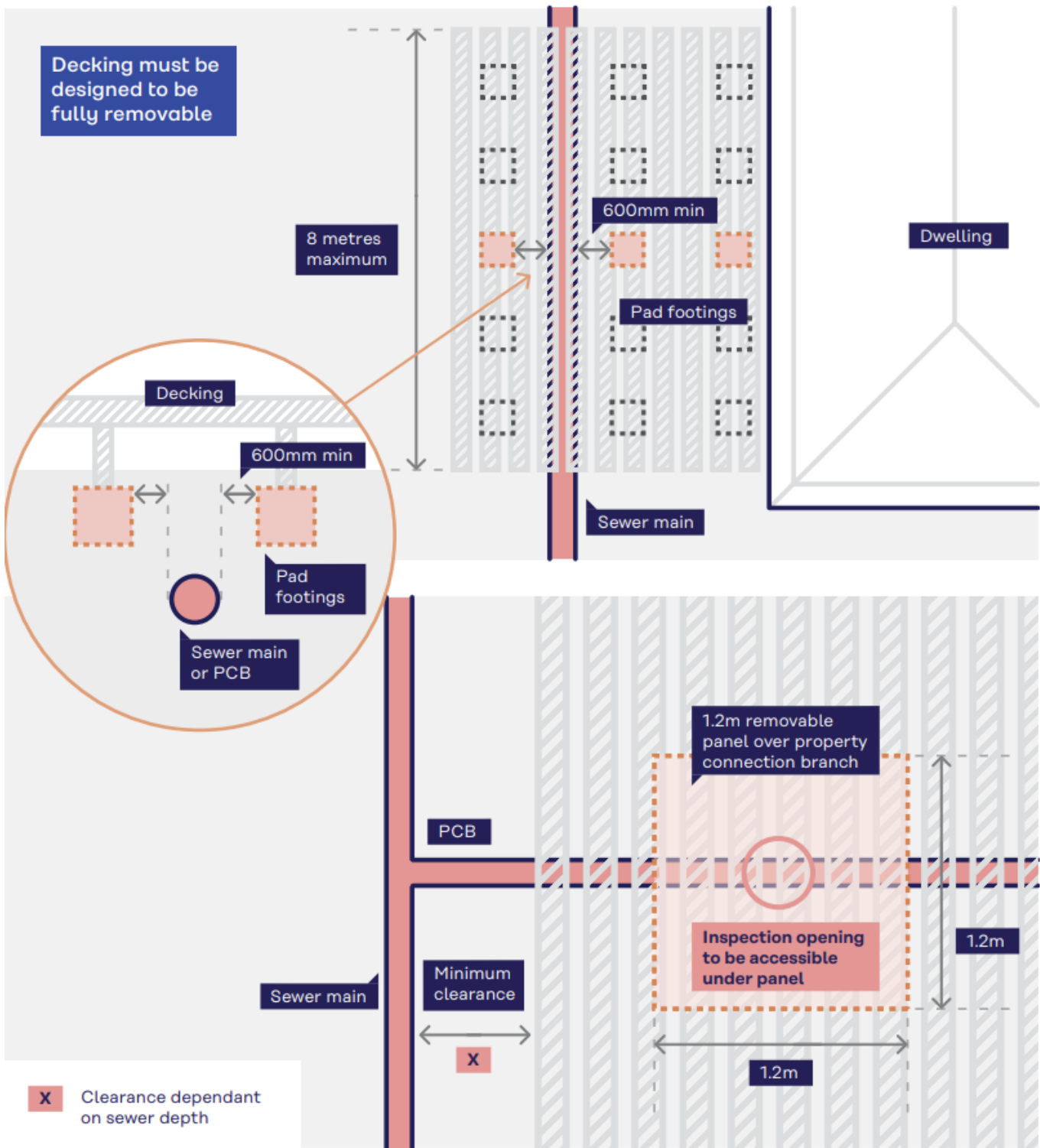


Figure 23: Decking over sewer





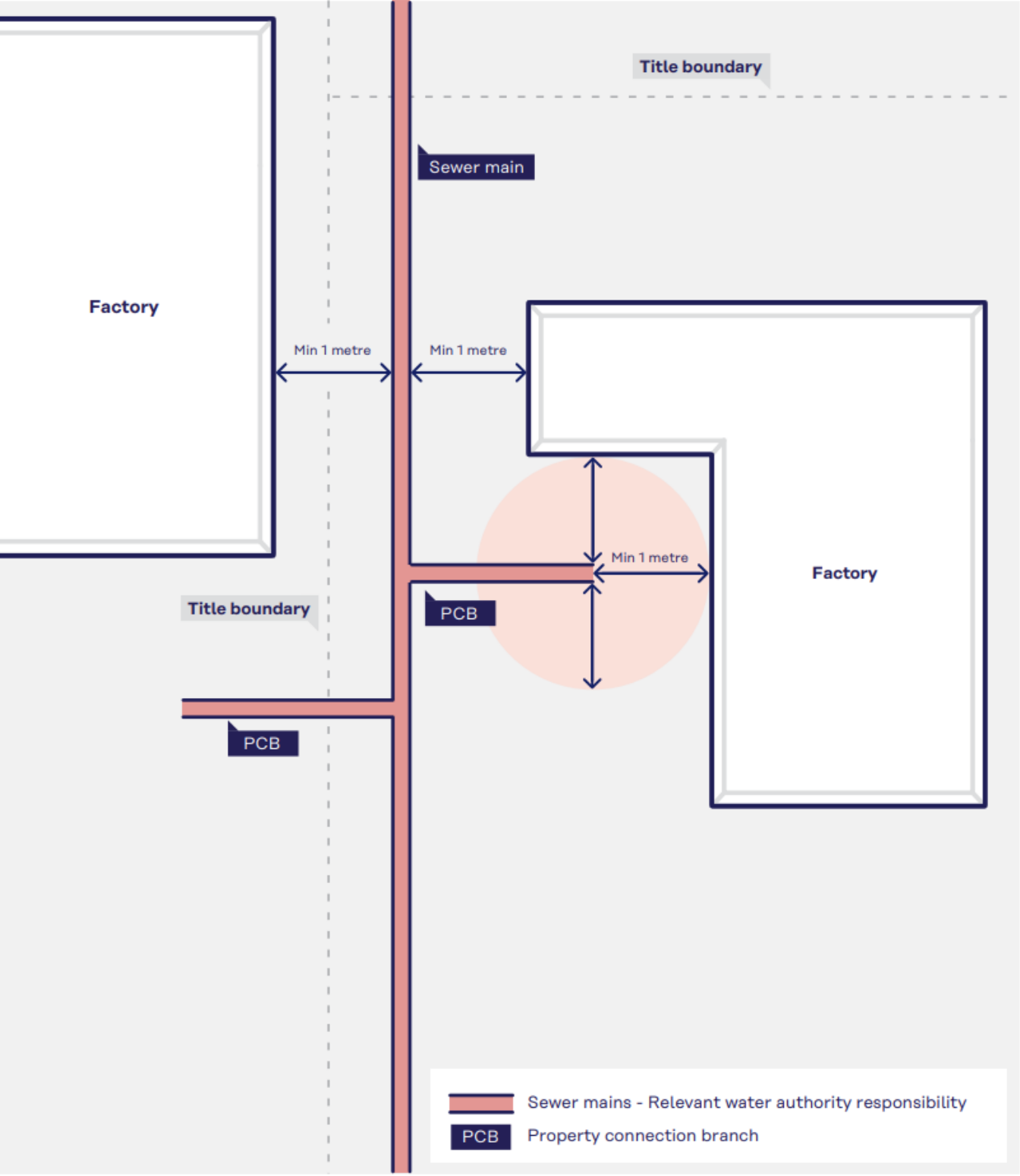
## 6.2. Commercial, industrial, public and sporting buildings

You cannot build commercial, industrial, public or sporting buildings over water corporation assets.

Item	Asset	Criteria
A	<ul style="list-style-type: none"> <li>Sewer mains</li> <li>Property connection branch</li> </ul>	<p>Works <b>adjacent</b> to sewer main or property connection branch must have:</p> <ul style="list-style-type: none"> <li>One metre horizontal clearance from the outside edge of the sewer main and property connection branch.</li> <li>footings/foundations which extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> </ul> <p>NOTE: In some cases, the water corporation may ask for an increased clearance up to the full width of the easement.</p>
B	<b>Maintenance hole</b>	<p>Works <b>adjacent</b> to a maintenance hole must have:</p> <ul style="list-style-type: none"> <li>a 1.5 metre horizontal clearance from the centreline of the sewer main</li> <li>footings/foundations which extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure</li> <li>maintenance hole cover levels which match new surface levels. If alteration works are needed, these will be arranged by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance holes can only be opened by persons authorised by the water corporation.</p>
C	<b>Maintenance chamber or maintenance shaft</b>	<p>Works <b>adjacent</b> to a maintenance chamber or maintenance shaft must ensure:</p> <ul style="list-style-type: none"> <li>there is a minimum one metre horizontal clearance from the centreline of the sewer main</li> <li>footings/foundations extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure</li> <li>maintenance shaft cover levels match new surface levels. If alteration works are needed, these will be arranged by the relevant relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance chambers and maintenance shafts can only be opened by persons authorised by the water corporation.</p>
D	<b>Water mains, sewer rising mains, vacuum lines and pressure sewers</b>	<p>The relevant water corporation will assess the potential impact of a failed water main, sewer rising main, vacuum line and pressure sewer on individual developments and may ask for clearances of more than one metre. Please contact the relevant water corporation at the design stage to find out the requirements.</p>
E	<b>Easements reserved for sewerage/water purposes containing no assets</b>	<ul style="list-style-type: none"> <li>If an easement is needed for future water or sewer developments, the application will not be approved.</li> </ul>

Item	Asset	Criteria
		<ul style="list-style-type: none"><li data-bbox="592 264 1465 360">• A minimum one metre horizontal clearance from the outside edge of an asset within an adjoining property will be required. This will be assessed on a case-by-case basis.</li></ul> <p data-bbox="592 371 667 398">NOTE:</p> <p data-bbox="592 405 1461 501">Where this easement is no longer needed for sewer/water purposes the relevant water corporation may consider an application to remove or change the easement</p>

Figure 24: Commercial/industrial



### 6.3. Balconies, eaves and canopies

Balconies and canopies are allowed over sewer assets (excluding sewer vents) where the height clearance requirements are met. Please refer to the height specifications table in [Section 6](#).

### 6.4. Ground anchors

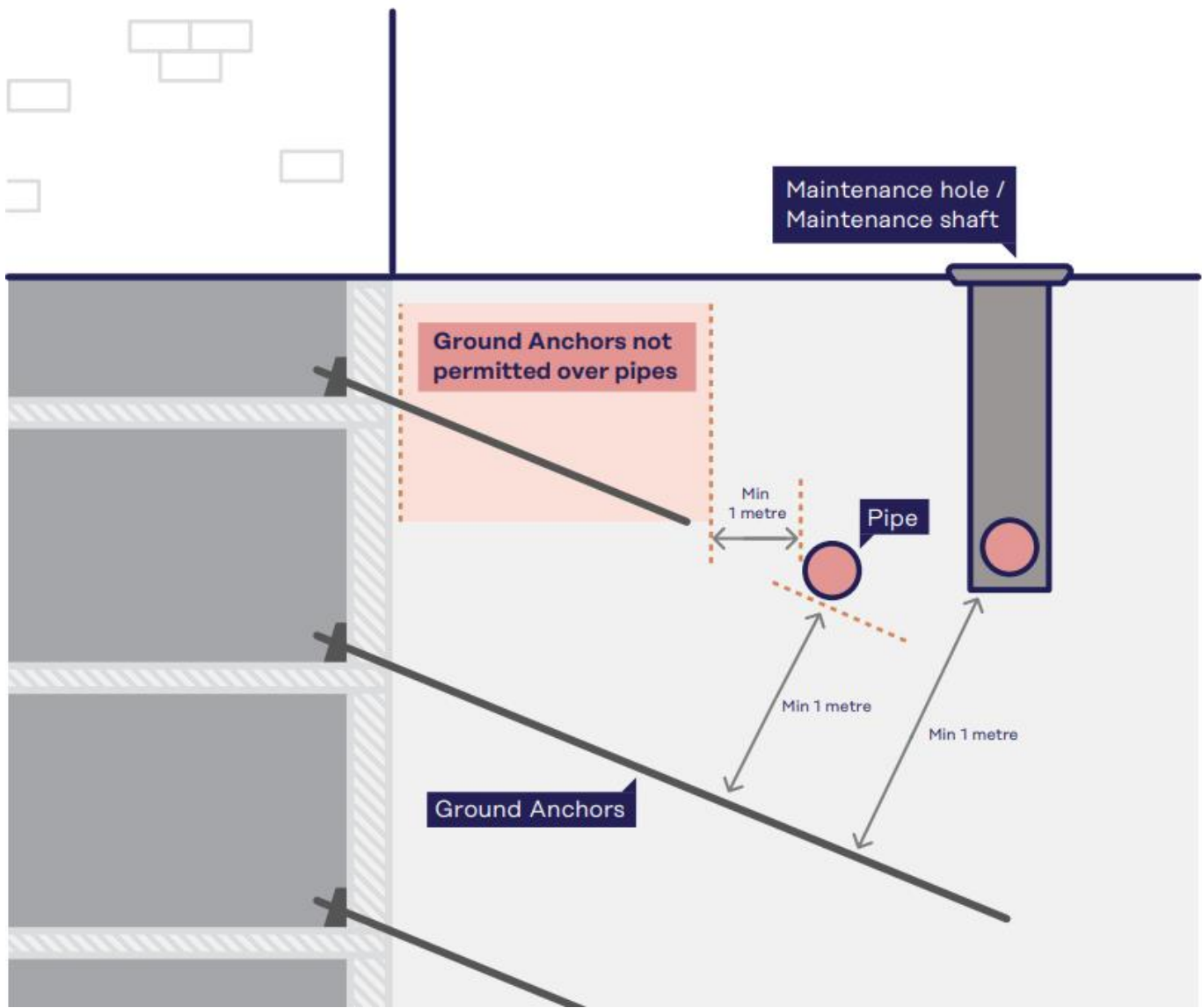
Where ground anchors are to be used, the following rules apply:

- Ground anchors are allowed when they are below the water corporation assets
- A one metre clearance is needed for any sewer main, property connection branch, maintenance chamber, maintenance shaft and maintenance hole
- A plan showing the sewer main clearly plotted against the cross section and the long section showing a one metre clearance being met between the ground anchors and the water corporation's assets must be included in the application.
- You will need to take care when installing ground anchors to ensure these clearances are met between the ground anchor and the relevant water corporation's assets
- Two CCTV inspections are necessary; one before works start and another once the works are completed, both at the applicant's expense. This allows the water corporation to check the condition of their assets before and after the installation. The CCTV footage before and after works will also provide evidence if repair works are needed on any of the assets.

**NOTE:**

If the water corporation needs to do repair works due to any damage caused by ground anchors, the owner or developer will need to pay for this.

Figure 25: Ground anchors



## 6.5. Fences and retaining walls

Item	Asset	Criteria
A	Sewer mains up to and including 225mm diameter and less than 3.5 metres deep (excluding concrete sewers)	<p>Fill is allowed over a sewer main if the final sewer depth is 3.5 metres or less.</p> <p>The works must include a minimum vertical cover of 600mm over the sewer main. A cross sectional plan may be needed, which must be drawn to Australian Height Datum (AHD) levels.</p> <p>The plans for site cuts need to show finished surface levels.</p> <p><b>Note:</b> Pad footings/foundations are allowed.</p> <p>Works <b>adjacent</b> to a sewer main must ensure:</p> <ul style="list-style-type: none"> <li>• there's a minimum 600mm horizontal clearance from the outside edge of the sewer main</li> <li>• where pad footings are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by structure.</li> </ul> <p>Works <b>traversing</b> a sewer main must ensure:</p> <ul style="list-style-type: none"> <li>• where pad footings are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by structure</li> <li>• footings/foundations have a minimum 600mm horizontal clearance</li> <li>• foundations have a minimum 600mm vertical clearance to the sewer main</li> <li>• retaining walls traverse the sewer main at a 90-degree angle</li> <li>• no additional weight will be placed on the sewer.</li> </ul>
B	Concrete sewer main (less than 3.5 metres deep)	<p>Works over concrete sewer mains are not allowed as this type of sewer pipe has a higher risk of failure.</p> <p>Additional fill over concrete sewer mains is not allowed.</p> <p>There must be a minimum vertical cover of 600mm over the sewer main.</p> <p>Plans for site cuts need to show the finished surface levels.</p> <p>Pad footings/ foundations are allowed.</p> <p>Works <b>adjacent</b> to a concrete sewer main require:</p> <ul style="list-style-type: none"> <li>• A minimum 600mm horizontal clearance from the outside edge of the sewer main</li> <li>• Where pad footings are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by structure.</li> </ul> <p><b>NOTE:</b></p> <p>Applications for works that traverse a concrete sewer main may be considered on a case-by-case basis where concrete sewers can be relined from maintenance hole to maintenance hole. You can request an inspection to see if this is possible. If this is possible, both the works and a CCTV inspection would be completed at the applicant's expense.</p>

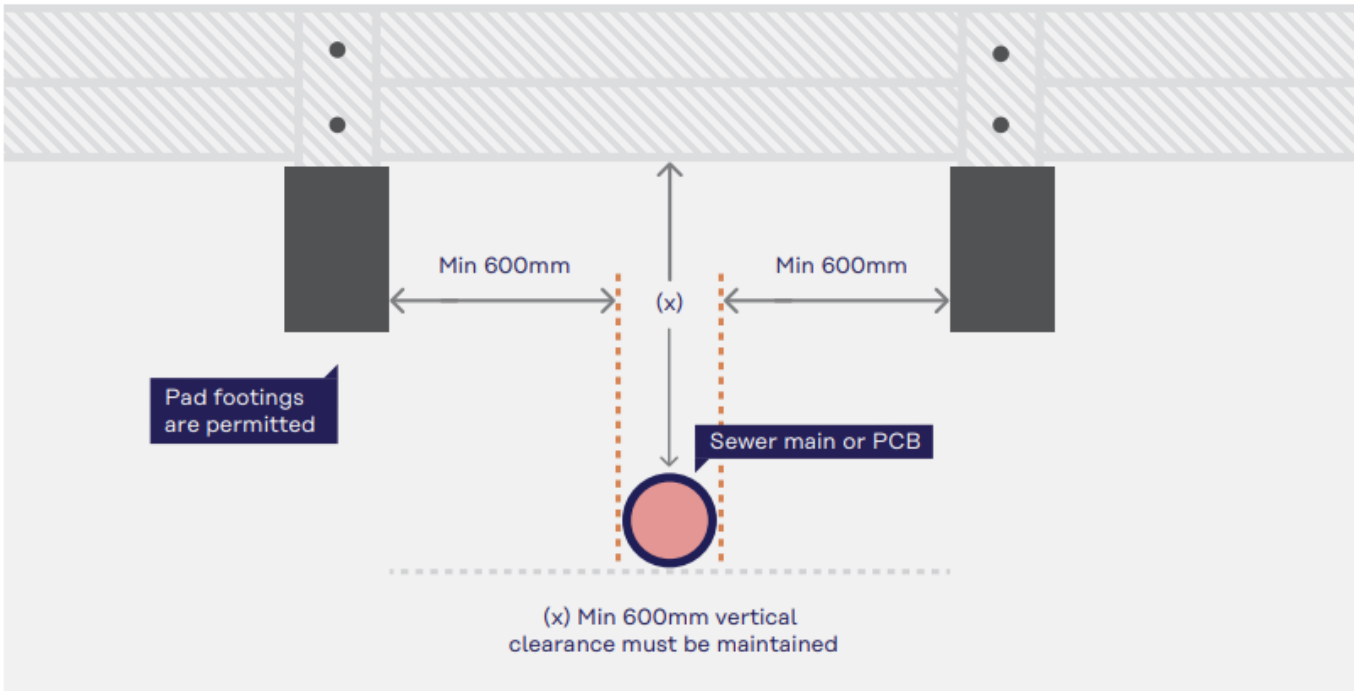
Item	Asset	Criteria
C	<ul style="list-style-type: none"> <li>• Sewer main greater than 3.5 metres deep</li> <li>• Property connection branch greater than 3.5 metres deep</li> <li>• Sewer main greater than 225mm diameter</li> </ul>	<p><b>Works over sewer mains and property connection branches greater than 3.5 metres deep are not allowed.</b></p> <p>Works <b>adjacent</b> to sewer mains and property connection branches deeper than 3.5 metres must have:</p> <ul style="list-style-type: none"> <li>• One metre horizontal clearance from the outside edge of the sewer main and property connection branch.</li> <li>• Where pad footings are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by structure.</li> </ul> <p>NOTE: Greater Western Water will consider works over a sewer main deeper than 3.5 metres on a case-by-case basis. An assessment will be necessary to decide the outcome. Submitting the application and fees doesn't guarantee the works will be approved.</p>
D	<p><b>Property connection branches less 3.5m deep</b></p>	<p>Works <b>adjacent</b> to a property connection branch must have:</p> <ul style="list-style-type: none"> <li>• a minimum of 600mm horizontal clearance between the proposed works/foundations and the property connection branch</li> </ul> <p>Pad footings/foundations are permitted.</p> <p>Works <b>traversing</b> a property connection branch also need:</p> <ul style="list-style-type: none"> <li>• footings/foundations with a minimum 600mm horizontal clearance</li> <li>• a minimum 600mm vertical clearance for foundations traversing the property connection branch.</li> </ul>
E	<p><b>Maintenance hole</b></p>	<p><b>Works over maintenance holes are not allowed.</b></p> <p>Works <b>adjacent</b> to a maintenance hole require:</p> <ul style="list-style-type: none"> <li>• a 1.5 metre horizontal clearance from the centreline of the sewer main</li> <li>• Where pad footings/foundations are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the maintenance hole, to ensure that no additional weight will be placed on the sewer by the structure</li> <li>• Maintenance hole cover levels must match new surface levels.</li> </ul> <p>NOTE: If alteration works are needed, these will be arranged by the relevant water corporation at the applicant's expense.</p> <p>NOTE: Maintenance holes can only be opened by persons authorised by the water corporation.</p>
F	<p><b>Maintenance chambers or maintenance shafts</b></p>	<p><b>Works over maintenance chambers or maintenance shafts are not allowed.</b></p> <p>Works <b>adjacent</b> to a maintenance shaft must ensure:</p> <ul style="list-style-type: none"> <li>• there is a minimum one metre horizontal clearance from the centreline of the sewer main.</li> <li>• If pad footings are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the maintenance chamber or maintenance shaft, to ensure that no additional load will be placed on the sewer by structure</li> </ul>

Item	Asset	Criteria
		<ul style="list-style-type: none"> <li>• maintenance chamber and maintenance shaft cover levels match new surface levels.</li> </ul> <p>If alteration works are needed, these will be done by the relevant water corporation at the applicant's expense.</p> <p>NOTE: Maintenance chambers and maintenance shafts can only be opened by persons authorised by the water corporation.</p>
G	<b>Water mains, sewer rising mains, vacuum lines and pressure sewers</b>	<p><b>Structures over water mains, sewer rising mains, vacuum lines and pressure sewers are not allowed.</b></p> <p>NOTE: The relevant water corporation will assess the potential impact of a failed water main, sewer rising main, vacuum line and pressure sewer on individual developments and may ask for clearances of more than one metre. Please contact the relevant water corporation at the design stage to find out the requirements.</p>
H	<b>Easements reserved for sewerage/water purposes containing no assets</b>	<ul style="list-style-type: none"> <li>• If an easement is needed for future water or sewer developments, the application will not be approved.</li> <li>• Minimum horizontal clearances from the outside edge of an asset within an adjoining property will be required. This will be assessed on a case-by-case basis.</li> </ul> <p>NOTE: If the easement is no longer needed for water or sewer purposes the relevant water corporation may consider an application to remove or change the easement.</p>



Figure 26: Retaining walls

### With Pad Footings (Lightweight)



### Without Pad Footings

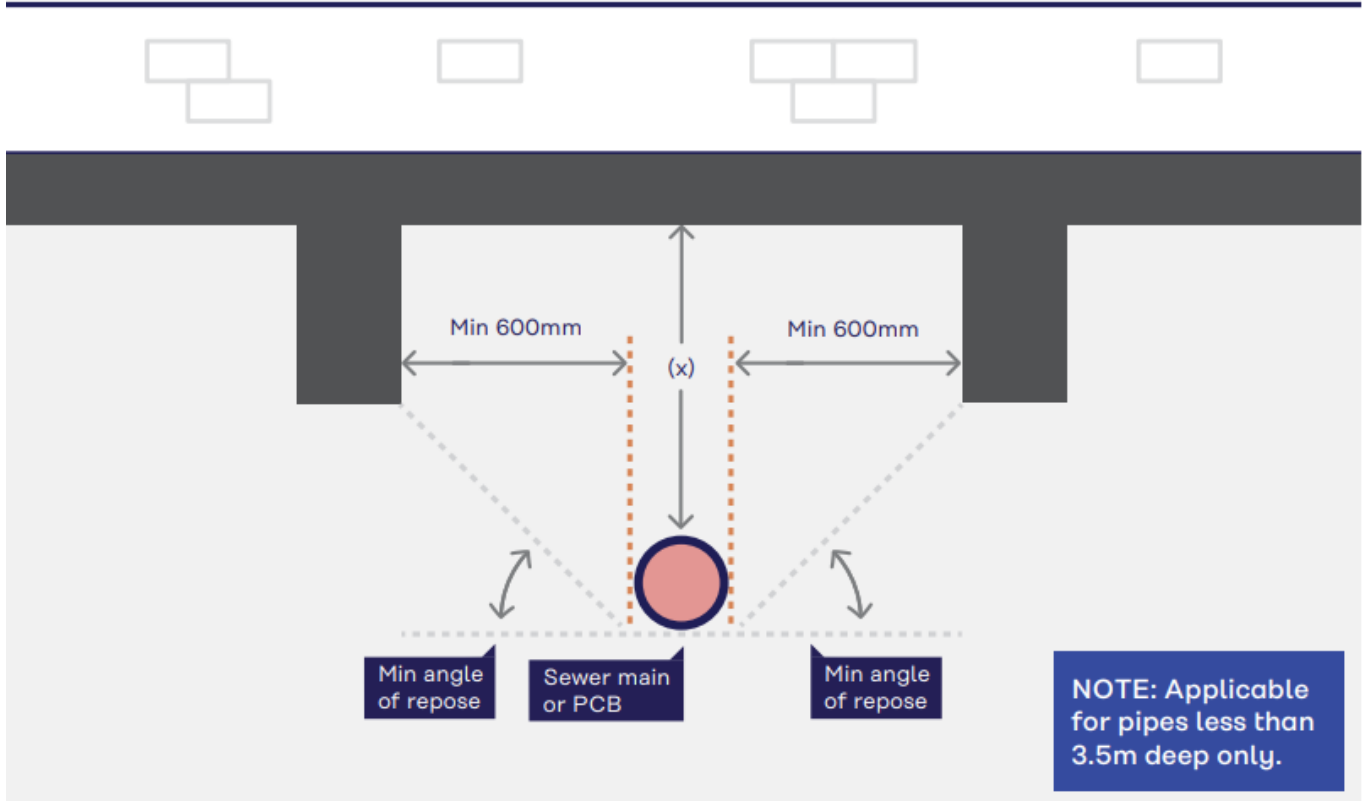
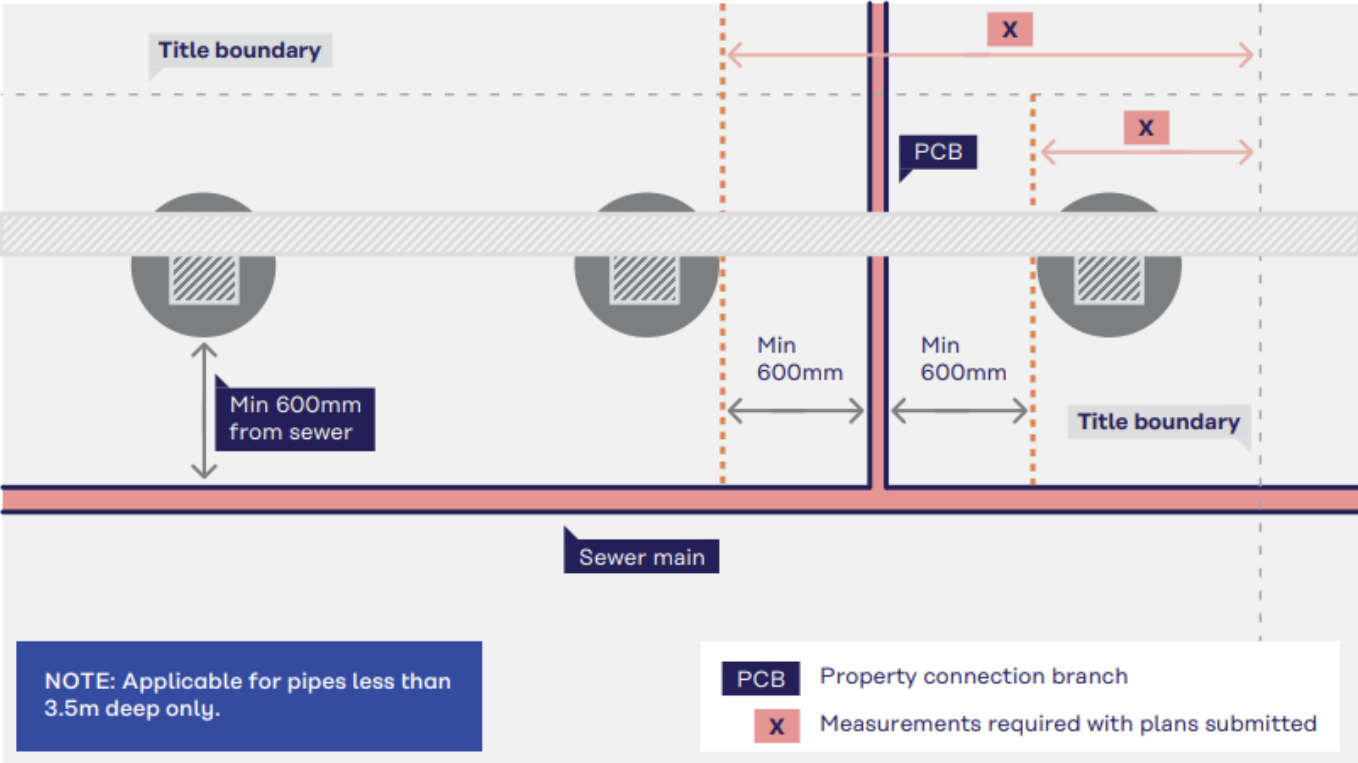


Figure 27: Retaining walls - timber or brick



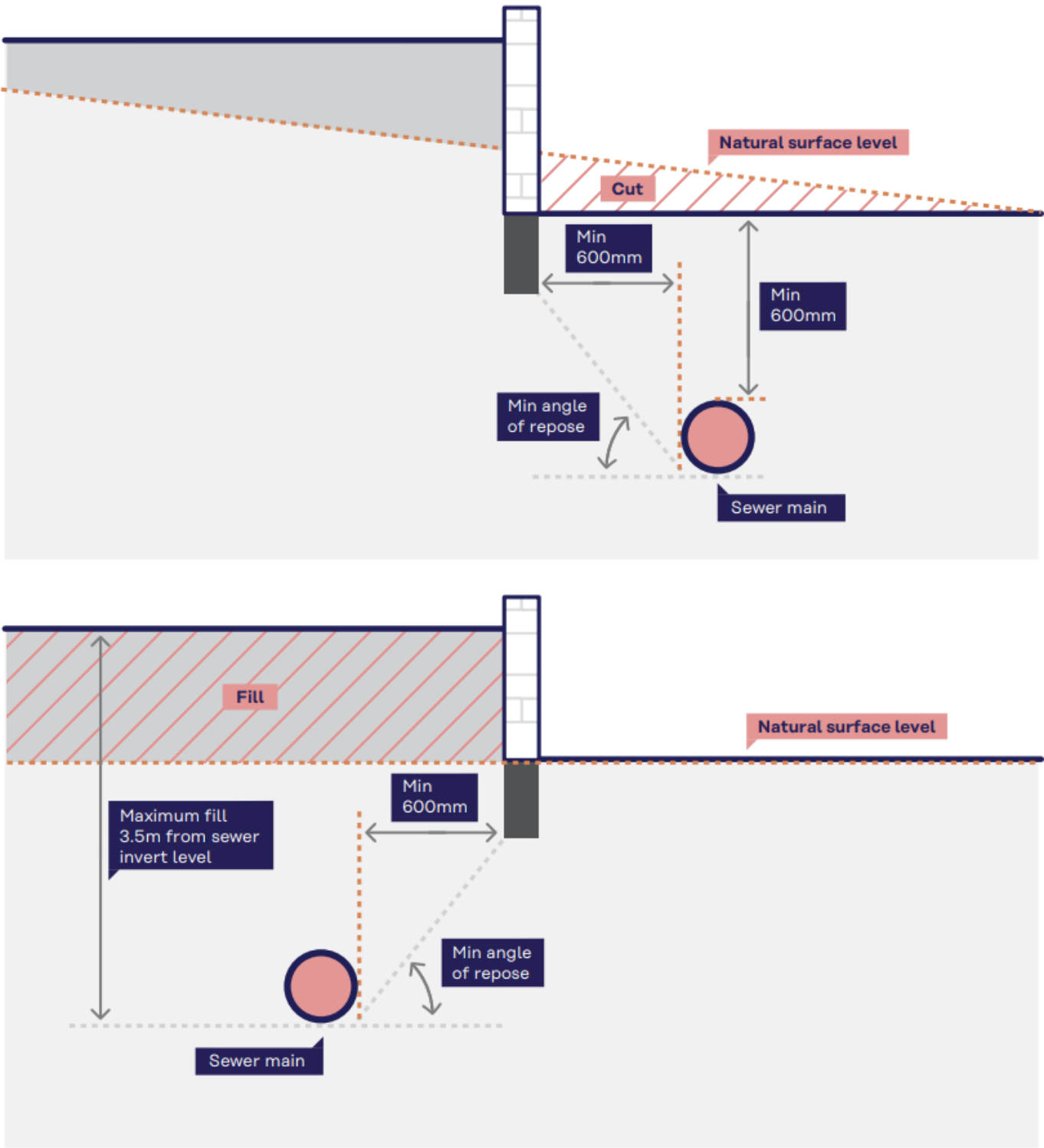
## 6.6. Landscaping, excavation and earthworks

### Site cut, fill and batter

Item	Asset	Criteria
A	<ul style="list-style-type: none"> <li>Sewer mains up to and including 225mm diameter and less than 3.5 metre deep (excluding concrete sewers)</li> <li>Property connection branches less 3.5 metre deep</li> </ul>	<p><b>Fill is allowed over sewer main or property connections if the final sewer depth is 3.5m or less.</b></p> <p><b>A minimum vertical cover of 600mm over the sewer main is required.</b></p> <p><b>A cross sectional plan may be required, which must be drawn to Australian Height Datum (AHD) levels.</b></p> <p><b>Plans for site cuts need to show finished surface levels.</b></p> <p>Works <b>adjacent</b> to sewer main or property connection must have:</p> <ul style="list-style-type: none"> <li>a minimum 600mm horizontal clearance from the outside edge of the sewer main.</li> </ul> <p>Works <b>traversing</b> a sewer main or property connection must:</p> <ul style="list-style-type: none"> <li>have consent for the placement of rockeries and other garden ornamentation</li> <li>ensure feature works can be easily moved or relocated</li> <li>not include any below ground ponds.</li> </ul> <p>NOTE: The owner is responsible for emptying and refilling any water features. This must comply with the current water restrictions in place.</p>
B	Concrete sewer mains less than 3.5 metres deep	<p><b>Works over concrete sewer mains are not allowed as concrete sewer mains have a higher risk of failure.</b></p> <p><b>Additional fill over concrete sewer mains is not allowed.</b></p> <p><b>A minimum vertical cover of 600mm over the sewer main is required.</b></p> <p><b>Site cuts need to show finished surface levels.</b></p> <p>Works <b>adjacent</b> to a concrete sewer main must have:</p> <ul style="list-style-type: none"> <li>a minimum 600mm horizontal clearance from the outside edge of the sewer main</li> <li>a minimum vertical cover of 600mm over the sewer main.</li> </ul> <p>NOTE: Applications may be considered on a case-by-case basis where concrete sewers can be relined from maintenance hole to maintenance hole. You can request an inspection to see if this is possible. If this is possible, both the works and a CCTV inspection would be completed at the applicant's expense.</p>
C	<ul style="list-style-type: none"> <li>Sewer main greater than 3.5 metres deep</li> <li>Property connection branch greater than 3.5m deep</li> <li>Sewer main greater than 225mm diameter</li> </ul>	<p><b>Works over sewer mains and property connection branches greater than 3.5 metres deep are not allowed.</b></p> <p>Works <b>adjacent</b> to sewer mains and property connection branches greater than 3.5 metres deep must have:</p> <ul style="list-style-type: none"> <li>a one metres horizontal clearance from the outside edge of the sewer main and property connection branch.</li> </ul> <p>NOTE: Greater Western Water will consider works over a sewer main deeper than 3.5 metres on a case-by-case basis. In these circumstances, an assessment is required. Submitting an application does not guarantee the works will be allowed.</p>

Item	Asset	Criteria
D	Maintenance hole	<p><b>Works over maintenance holes are not allowed.</b></p> <p>Works <b>adjacent</b> to a maintenance hole must ensure:</p> <ul style="list-style-type: none"> <li>• there is a 1.5 metre horizontal clearance from the centreline of the sewer main</li> <li>• where pad footings/foundations are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure</li> <li>• the maintenance hole cover levels match the new surface levels. If alteration works are needed, these will be arranged by the relevant water corporation at the applicant’s expense.</li> </ul> <p>NOTE: Maintenance holes can only be opened by persons authorised by the water corporation.</p>
E	Maintenance chamber or maintenance shaft	<p><b>Works over maintenance chambers or maintenance shafts are not allowed.</b></p> <p>Works <b>adjacent</b> to a maintenance shaft must ensure:</p> <ul style="list-style-type: none"> <li>• there is a minimum one metre horizontal clearance from the centreline of the sewer main</li> <li>• where pad footings/foundations aren’t structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure</li> <li>• the maintenance shaft cover levels match new surface levels. If alteration works are needed, these will be arranged by the relevant water corporation at the applicant’s expense.</li> </ul> <p>NOTE: Maintenance chambers and maintenance shafts can only be opened by persons authorised by the water corporation.</p>
F	Water mains, sewer rising mains, vacuum lines and pressure sewers	<p><b>Works over water mains, sewer rising mains, vacuum lines and pressure sewers are not allowed.</b></p> <p>NOTE: The relevant water corporation will assess the potential impact of a failed water main, sewer rising main, vacuum line and pressure sewer on individual developments and may ask for clearances of more than than one metre. Please contact the relevant water corporation at the design stage to find out the requirements.</p>
G	Easements reserved for sewerage/water purposes containing no assets	<ul style="list-style-type: none"> <li>• If an easement is needed for future water or sewer developments, the application will not be approved.</li> <li>• Minimum horizontal clearances from the outside edge of an asset within an adjoining property will be required. This will be assessed on a case-by-case basis.</li> </ul> <p>NOTE: If an easement is not needed by the water corporation anymore, the water corporation may consider an application to remove or change the easement.</p>

Figure 28: Excavation – cut and fill

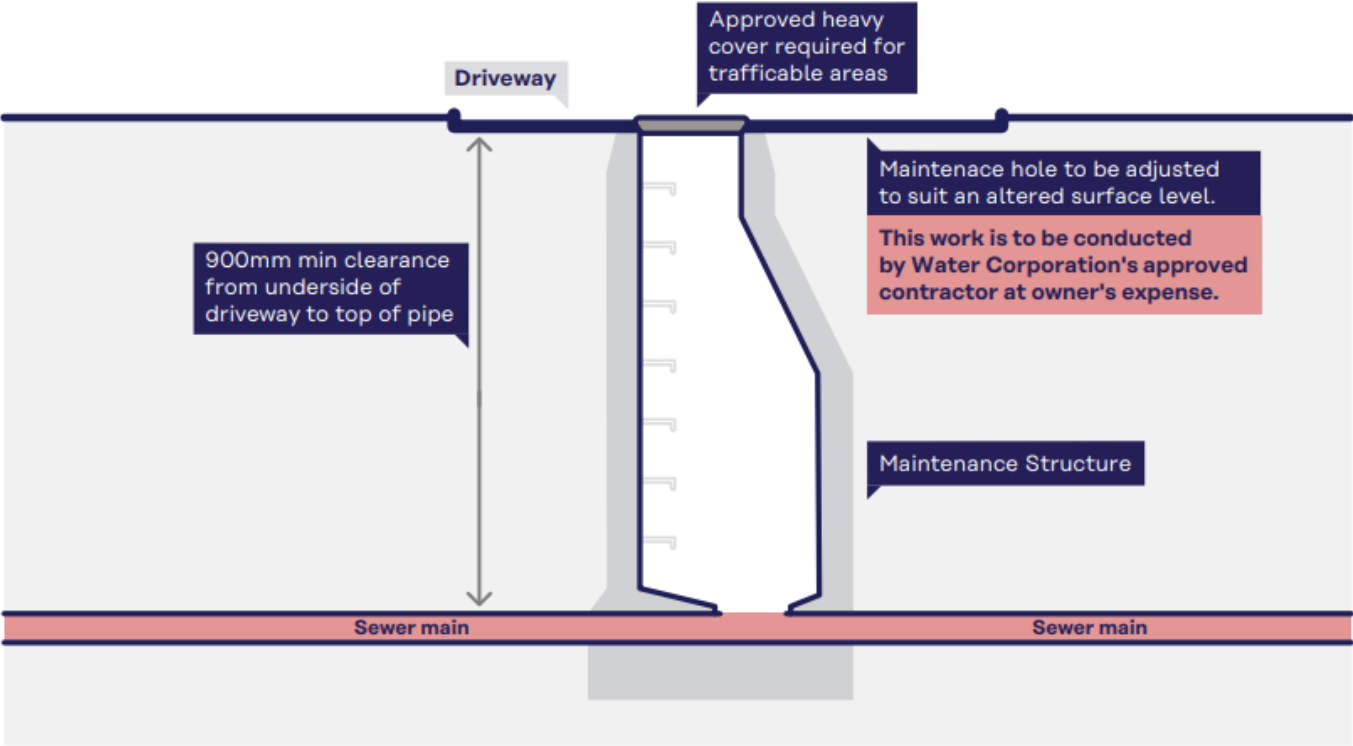


## 6.7. Driveways, paving, crossovers, ramps and hardstands

NOTE: Ramps over sewer mains are not allowed

Item	Asset	Criteria
A	<ul style="list-style-type: none"> <li>Sewer mains up to and including 225mm diameter and less than 3.5 metres deep</li> <li>Property connection branch less than 3.5 metres deep</li> </ul>	<p>For building a driveway or pavement, the works must ensure:</p> <ul style="list-style-type: none"> <li>the driveway or paving is no more than 125mm thick</li> <li>a minimum 900mm vertical cover is maintained over the sewer main or property connection branch</li> <li>construction joints/saw cuts are provided at maximum centres of 1.2 metres, centrally located over the sewer to identify the removable section</li> <li>No additional weight is to be placed on the sewer main by the works.</li> </ul>
B	<ul style="list-style-type: none"> <li>Sewer main greater than 3.5 metres deep</li> <li>Property connection branch greater than 3.5 metres deep</li> <li>Sewer main greater than 225mm diameter</li> </ul>	<p><b>Applications for driveways will be assessed on a case-by-case basis.</b></p>
C	Maintenance hole, maintenance chamber and maintenance shaft	<p>Driveways/paving traversing or adjacent to a maintenance structure must ensure:</p> <ul style="list-style-type: none"> <li>maintenance structure cover levels match the new surface levels. If alteration works are needed, these will be arranged by the relevant water corporation at the applicant's expense.</li> <li>If heavy covers need to be fitted to meet the requirements, these works will be arranged by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance structures can only be opened by persons authorised by the water corporation.</p>
D	Water mains, sewer rising mains, vacuum lines and pressure sewers	<p><b>Applications for driveways and paving will be assessed on a case-by-case basis.</b></p> <p>NOTE: The relevant water corporation will assess the potential impact of a failed water main, sewer rising main, vacuum line or pressure sewer on individual developments and may ask for clearances of more than one metre. Please contact the relevant water corporation at the design stage to find out the requirements.</p>
E	Easements reserved for sewerage/water purposes containing no assets	<p><b>Applications for driveways and paving will be assessed on a case-by-case basis.</b></p> <p>NOTE: If an easement is no longer needed for water or sewer purposes, the relevant water corporation may consider an application to remove or change the easement.</p>

Figure 29: Driveways and paving



## 6.8. Swimming pools, spas and water tanks

Below-ground swimming pools, spas and water tanks over any sewer main are not permitted.

**NOTE:**

Any pumps and filter equipment including pipework must have a minimum of one metre horizontal clearance to water or sewer assets.

Item	Asset	Criteria
A	<p><b>Sewer mains up to and including 225mm diameter and less than 3.5 metres deep (excluding concrete sewers)</b></p>	<p>Works <b>adjacent</b> to a sewer main must ensure:</p> <ul style="list-style-type: none"> <li>• there is a minimum of one metre horizontal clearance between the proposed swimming pools, spas and water tanks (including coping/bond beam or any below-ground support of the pool or structure including stabilizing backfill) and the outside edge of the sewer main</li> <li>• that, for below-ground pools and above ground pools where pad footings/foundations are not structurally acceptable, the footings/foundation must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure, or</li> <li>• an engineer’s report is provided, stating: “No additional load will be placed on the sewer main by the structure”</li> </ul> <p>Works <b>traversing</b> a sewer main must ensure:</p> <ul style="list-style-type: none"> <li>• The volume of above ground pools, spas or water tanks is 5,000 litres or less</li> <li>• a minimum 600mm vertical clearance over the sewer main is maintained.</li> <li>• an engineer’s report is provided, stating: “No additional load will be placed on the sewer main by the structure.</li> </ul> <p>The owner is responsible for emptying and refilling the swimming pool and must comply with the current water restrictions in place.</p> <p><b>Saunas</b></p> <ul style="list-style-type: none"> <li>• A minimum of one metre horizontal clearance between the proposed outdoor sauna and the outside edge of the sewer main must be maintained.</li> </ul>
B	<p><b>Concrete sewer main less than 3.5 metres deep</b></p>	<p><b>Works over concrete sewer mains are not allowed as concrete sewer mains have a higher risk of failure.</b></p> <p>Works <b>adjacent</b> to a concrete sewer main must ensure:</p> <ul style="list-style-type: none"> <li>• there is a minimum one metre horizontal clearance between the proposed swimming pools, spas and water tanks (including a coping/bond beam or any below-ground support of the pool or structure including stabilizing backfill) and the outside edge of the sewer main</li> <li>• that for below-ground pools the footings/foundation must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure, or</li> <li>• an engineer’s report is provided, stating: “No additional load will be placed on the sewer main by the structure.”</li> </ul>



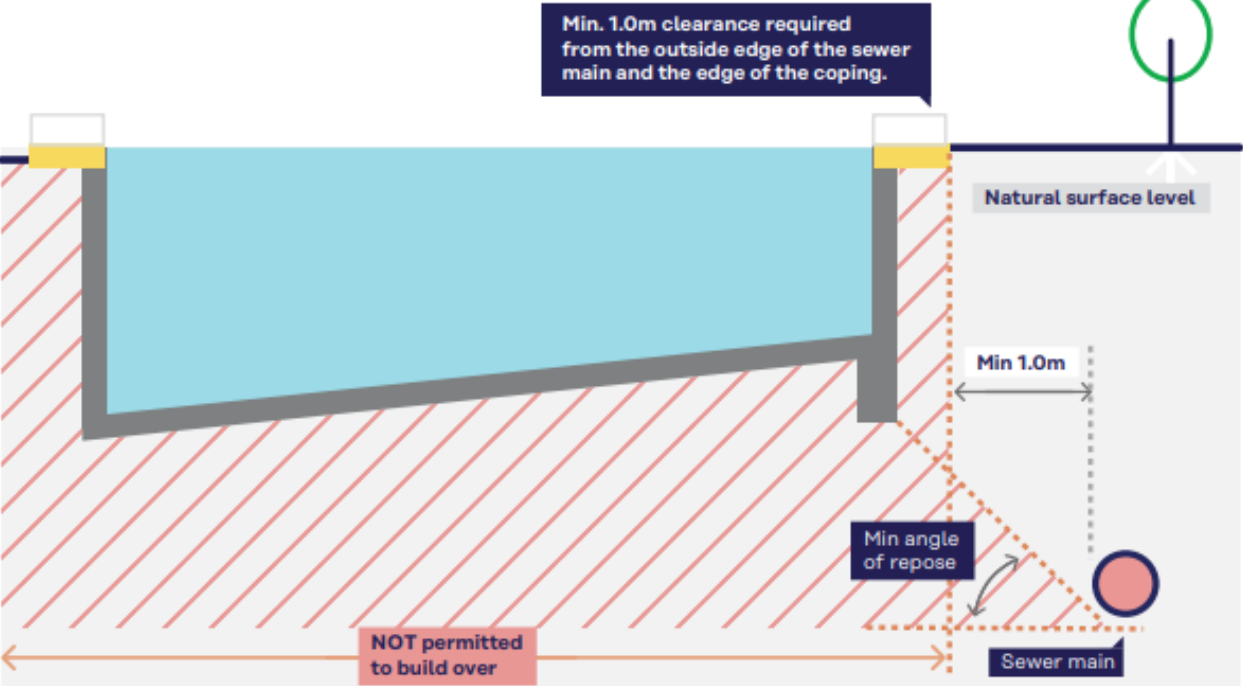
Item	Asset	Criteria
		<p>NOTE: The relevant water corporation may ask for an increased clearance up to the full width of the easement. Applications to build above-ground demountable swimming pools, spas, and water tanks with a maximum volume of 5,000 litres over a concrete sewer main are considered on a case-by-case basis. In these circumstances, an assessment is needed. Submitting an application does not guarantee the works will be approved.</p>
C	<ul style="list-style-type: none"> <li>• Sewer main greater than 3.5 metres deep</li> <li>• Property connection branch greater than 3.5 metres deep</li> <li>• Sewer main greater than 225mm diameter</li> </ul>	<p><b>Works over sewer mains and property connection branches more than 3.5 metres deep are not allowed.</b> Works <b>adjacent</b> to these assets must ensure:</p> <ul style="list-style-type: none"> <li>• there is a minimum of one metre horizontal clearance between the proposed swimming pools, spas, and water tanks (including coping/bond beam or any below ground support of the pool or structure including stabilising backfill) and the outside edge of the sewer main and the property connection branch.</li> <li>• that for below-ground pools the footings/foundation must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure, or</li> <li>• an engineer’s report is provided, stating: “No additional load will be placed on the sewer main by the structure”.</li> </ul> <p>NOTE: In some cases the water corporation may ask for an increased clearance up to the full width of the easement. Applications for above-ground demountable swimming pools, spas and water tanks with a maximum volume of 5,000 litres over a sewer main deeper than 3.5 metres will be assessed on a case-by-case basis. In these circumstances, an assessment is needed. Submitting an application does not guarantee the works will be approved.</p>
D	<p>Property connection branch servicing an adjoining property less than 3.5 metres deep</p>	<p><b>Works over property connection branches servicing adjoining properties are not allowed. These works would come with a high risk of impacting the delivery of water or sewer services to your neighbours.</b> Works <b>adjacent</b> to an adjoining property connection branch must ensure:</p> <ul style="list-style-type: none"> <li>• there is a minimum one metre horizontal clearance between the proposed works/foundation and the property connection branch</li> <li>• that for below-ground pools the footings/foundation must extend to a minimum depth to the angle of repose to the invert level of the sewer branch, to ensure that no additional load will be placed on the sewer by the structure, or</li> <li>• an engineer’s report is provided, stating: “No additional load will be placed on the sewer main by the structure”</li> </ul>
E	<p>Property connection branch servicing your own property less than 3.5 metre deep</p>	<p>Construction <b>adjacent</b> to a property connection branch must ensure:</p> <ul style="list-style-type: none"> <li>• there is a minimum of one metre horizontal clearance between the proposed swimming pools, spas and water tanks (including coping/bond beam or any below ground support of the pool or</li> </ul>

Item	Asset	Criteria
		<p>structure including stabilising backfill) and the outside edge of the sewer main</p> <ul style="list-style-type: none"> <li>that for below-ground pools the footings/foundation must extend to a minimum depth to the angle of repose to the invert level of the sewer branch, to ensure that no additional load will be placed on the sewer by the structure, or</li> <li>an engineer’s report must be provided stating: “No additional load will be placed on the sewer main by the structure”.</li> </ul> <p>Construction <b>traversing</b> a property branch must ensure:</p> <ul style="list-style-type: none"> <li>there is a minimum of 600mm horizontal clearance between the proposed swimming pools, spas and water tanks (including coping/bond beam or any below ground support of the pool or structure including stabilising backfill) and the outside edge of the the inspection opening (IO).</li> <li>The volume of above ground pools, spas or water tanks is 5,000 litres or less</li> <li>there is a minimum 600mm vertical clearance over the sewer main</li> <li>the owner empties and refills the swimming pool in line with any current water restrictions in place</li> <li>any pumps and/or pipework have a minimum of one metre horizontal clearance to the property branch.</li> <li>an engineer’s report must be provided stating: “No additional load will be placed on the sewer main by the structure”.</li> </ul> <p><b>For saunas:</b></p> <ul style="list-style-type: none"> <li>There must be a minimum of one metre horizontal clearance between the proposed outdoor sauna and the outside edge of the property branch.</li> </ul>
F	Maintenance hole	<p><b>Works over maintenance holes are not allowed.</b></p> <p>Works <b>adjacent</b> to a maintenance hole must ensure:</p> <ul style="list-style-type: none"> <li>there is a 1.5 metre horizontal clearance from the centreline of the sewer main</li> <li>that for below-ground pools the footings/foundation must extend to a minimum depth to the angle of repose to the invert level of the maintenance hole, to ensure that no additional load will be placed on the sewer by the structure, or</li> <li>an engineer’s report is provided, stating: “No additional load will be placed on the sewer main by the structure”</li> <li>maintenance hole cover levels match new surface levels. If alteration works are needed, the works will be arranged by the relevant water corporation at the applicant’s expense.</li> </ul> <p>NOTE: Maintenance structures can only be opened by persons authorised by the water corporation.</p>
G	Maintenance chamber or maintenance shaft	<p><b>Works over maintenance chambers or maintenance shafts are not allowed.</b></p> <p>Works <b>adjacent</b> to a maintenance shaft must ensure:</p> <ul style="list-style-type: none"> <li>there is a minimum one metre horizontal clearance from the centreline of the sewer main</li> </ul>

Item	Asset	Criteria
		<ul style="list-style-type: none"> <li>that for below-ground pools the footings/foundation must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure, or</li> <li>an engineer’s report is provided, stating: “No additional load will be placed on the sewer main by the structure.”</li> <li>maintenance hole cover levels match new surface levels. If alteration works are needed, the works will be arranged by the relevant water corporation at the applicant’s expense.</li> </ul> <p>NOTE: Maintenance structures can only be opened by persons authorised by the water corporation.</p>
H	<b>Water mains, sewer rising mains, vacuum lines and pressure sewers</b>	<p><b>Structures over water mains, sewer rising mains, vacuum lines and pressure sewers are not allowed.</b></p> <p>NOTE: The relevant water corporation will assess the potential impact of a failed water main, sewer rising main, vacuum line or pressure sewer on individual developments and may ask for clearances of more than one metre. Please contact the relevant water corporation at the design stage to find out the requirements.</p>
I	<b>Easements reserved for sewerage/water purposes containing no assets</b>	<ul style="list-style-type: none"> <li>If the easement is needed for future water or sewer development, the application will not be approved.</li> <li>Minimum horizontal clearances from the outside edge of an asset within an adjoining property will be required. This will be assessed on a case-by-case basis.</li> </ul> <p>NOTE: If the easement is no longer needed for water or sewer purposes, the relevant water corporation may consider an application to remove or change the easement.</p>

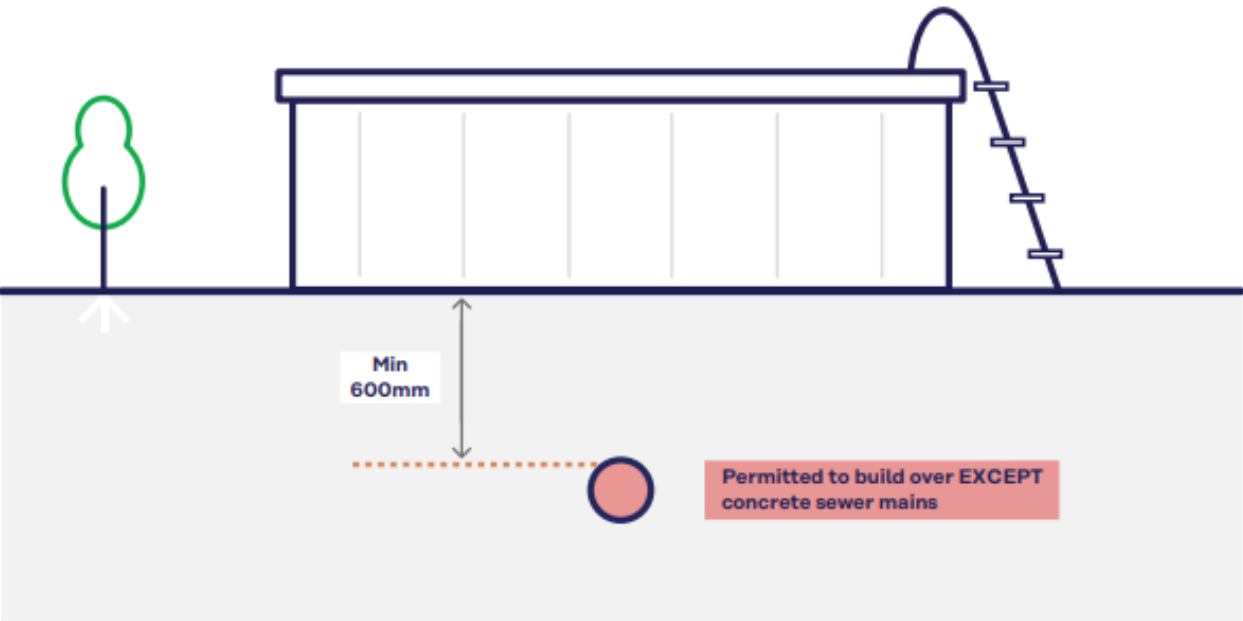
Figure 30: Pools and spas

### In-ground pool or spa



**NOTE:** Engineer's report must be provided stating that **NO ADDITIONAL LOAD** will be placed on the sewer main by the swimming pool. Minimum 1m clearance required from the outside edge of the sewer main to the edge of coping/bond beam or any below ground support of the pool or structure including stabilising backfill.

### Above ground removable pool or water tank (<5000L)



## 6.9. Tennis courts, lawn bowling greens or similar sporting surfaces

Item	Asset	Criteria
A	<p><b>Sewer mains up to and including 225mm diameter and less than 3.5 metres deep (excluding concrete sewers)</b></p>	<p>Works <b>adjacent</b> to sewer main must ensure:</p> <ul style="list-style-type: none"> <li>• there is a minimum 600mm horizontal clearance from the outside edge of the sewer main</li> <li>• where pad footings/foundations are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> </ul> <p>Works <b>traversing</b> a sewer main must:</p> <ul style="list-style-type: none"> <li>• include details for reinforced concrete slab</li> <li>• include details in a slab plan to scale indicating the location of full depth saw cuts/breakup slab sections or construction/expansion joint sections, where traversing a sewer main</li> <li>• ensure construction joints must have a minimum clearance of 600mm offset on each side of sewer main</li> <li>• include a cross section plan showing a minimum 600mm vertical clearance from the underside of the foundation to the top of the sewer main</li> <li>• include a work method statement detailing the process for accessing the sewer main if maintenance work is needed</li> <li>• have a minimum horizontal clearance of one metre between the posts/light poles and the outside edge of the sewer main</li> <li>• ensure any footings/foundations extend a minimum depth to invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure</li> <li>• arrange an inspection of the pipes condition, via CCTV, at applicant's expense, before getting final approval</li> <li>• ensure any artificial surfaces have a separate removable/roll off section with a minimum 600mm offset on each side of the sewer.</li> </ul>
B	<p><b>Concrete sewer main less than 3.5 metres deep</b></p>	<p><b>Works over concrete sewer mains are not allowed as concrete sewer mains have a higher risk of failure.</b></p> <p>Works <b>adjacent</b> to a concrete sewer main must ensure:</p> <ul style="list-style-type: none"> <li>• there is a minimum 600mm horizontal clearance from the outside edge of the sewer main</li> <li>• where pad footings/foundations aren't structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> </ul> <p>NOTE: Applications to traverse a concrete sewer main may be considered on a case-by-case basis if the concrete sewers can be relined from maintenance hole to maintenance hole. You can request an inspection to see if this is possible. If this is possible, both the relining and a CCTV inspection would be completed at the applicant's expense.</p>
C	<ul style="list-style-type: none"> <li>• <b>Sewer main greater than 3.5 metres deep</b></li> </ul>	<p><b>Works over sewer mains and property connection branches greater than 3.5 metres deep are not allowed.</b></p>

Item	Asset	Criteria
	<ul style="list-style-type: none"> <li>• <b>Property connection branch greater than 3.5 metres deep</b></li> <li>• <b>Sewer main greater than 225mm diameter</b></li> </ul>	<p>Works <b>adjacent</b> to sewer mains and property connection branches deeper than 3.5 metres must ensure:</p> <ul style="list-style-type: none"> <li>• there is a one metre horizontal clearance from the outside edge of the sewer main and the property connection branch.</li> <li>• where pad footings/foundations are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> </ul> <p>NOTE: Greater Western Water will consider works over a sewer main deeper than 3.5 metres on a case-by-case basis. In these circumstances, an assessment is required. Submitting an application does not guarantee the works will be approved.</p>
D	<p><b>Property connection branch servicing an adjoining property less 3.5 metres deep</b></p>	<p><b>Works over property connection branches servicing adjoining properties are not allowed. These works would come with a high risk of impacting the delivery of water or sewer services to your neighbours.</b></p> <p>Works <b>adjacent</b> to an adjoining property connection branch must ensure:</p> <ul style="list-style-type: none"> <li>• there is a minimum 600mm horizontal clearance between the proposed works/foundation and the property connection branch</li> <li>• where pad footings/foundations are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> </ul>
E	<p><b>Property connection branch servicing own property less 3.5 metres deep</b></p>	<p>Works <b>adjacent</b> to a property connection branch must ensure</p> <ul style="list-style-type: none"> <li>• there is a minimum 600mm horizontal clearance between the proposed works/foundations and the property connection branch.</li> <li>• where pad footings/foundations are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> </ul> <p>In addition to the above, works <b>traversing</b> a property connection branch also must ensure:</p> <ul style="list-style-type: none"> <li>• a work method statement is provided detailing the process for accessing the property connection branch if maintenance work is required</li> <li>• a slab plan to scale is provided which indicates the location of full depth saw cuts/breakup slab sections or construction/expansion joint sections where traversing a property connection branch</li> <li>• any footings/foundation traversing the sewer main must be a minimum 600mm away but no further than one metre</li> <li>• any foundations traversing the property connection branch must maintain a minimum 600mm vertical clearance.</li> </ul>
F	<p><b>Maintenance hole</b></p>	<p><b>Works over maintenance holes are not allowed.</b></p> <p>Works <b>adjacent</b> to a maintenance hole must ensure:</p> <ul style="list-style-type: none"> <li>• there is a 1.5 metre horizontal clearance from the centreline of the sewer main</li> </ul>

Item	Asset	Criteria
		<ul style="list-style-type: none"> <li>where pad footings/foundations are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the maintenance hole, to ensure that no additional load will be placed on the sewer by the structure</li> <li>maintenance hole cover levels match the new surface levels. If alteration works are needed, the works will be arranged by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance structures can only be opened by persons authorised by the water corporation.</p>
G	<b>Maintenance chamber or maintenance shaft</b>	<p><b>Works over maintenance chambers or maintenance shafts are not allowed.</b></p> <p>Works <b>adjacent</b> to a maintenance chamber or maintenance shaft must ensure:</p> <ul style="list-style-type: none"> <li>there is a minimum one metre horizontal clearance from the centreline of the sewer main</li> <li>where pad footings are not structurally acceptable, footings/foundations must extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure</li> <li>maintenance chamber or maintenance shaft cover levels match the new surface levels. If alteration works are needed, the works will be arranged by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance structures can only be opened by persons authorised by the water corporation.</p>
H	<b>Water mains, sewer rising mains, vacuum lines and pressure sewers</b>	<p><b>Works over water mains, sewer rising mains, vacuum lines and pressure sewers are not allowed.</b></p> <p>NOTE: The relevant water corporation will assess the potential impact of a failed water main, sewer rising main, vacuum line or pressure sewer on individual developments and may ask for clearances of more than one metre. Please contact the relevant water corporation at the design stage to find out the requirements.</p>
I	<b>Easements reserved for sewerage/water purposes containing no assets</b>	<ul style="list-style-type: none"> <li>If the easement is needed for future water or sewer developments, the application will not be approved.</li> <li>Minimum horizontal clearances from the outside edge of an asset within an adjoining property will be required. This will be assessed on a case-by-case basis.</li> </ul> <p>NOTE: If the easement is no longer needed for sewer or water purposes, the relevant water corporation may consider an application to remove or change the easement.</p>

## 6.10. Electrical transmission and telecommunication poles, light poles, towers and signage

Item	Asset	Criteria
A	Sewer mains	<p><b>Works over sewer mains are not allowed.</b></p> <p>Works <b>adjacent</b> to sewer mains must ensure:</p> <ul style="list-style-type: none"> <li>there is a minimum one metre horizontal clearance from the outside edge of the sewer main, or the works must be outside of the easement</li> <li>any footings/foundations extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure.</li> </ul>
B	Property connection branch	<p>Works <b>adjacent</b> to a property connection branch must ensure:</p> <ul style="list-style-type: none"> <li>there is a minimum one metre horizontal clearance between the proposed works/foundation and the property connection branch</li> <li>any footings/foundations extend to a minimum depth to the angle of repose to the invert level of the property connection branch to ensure that no additional load will be placed on the property connection branch by the structure.</li> </ul>
C	Maintenance hole	<p><b>Works over maintenance holes are not allowed</b></p> <p>Works <b>adjacent</b> to a maintenance hole must ensure:</p> <ul style="list-style-type: none"> <li>there is a 1.5 metre horizontal clearance from the centreline of the sewer main</li> <li>any footings/foundations extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure</li> <li>maintenance hole cover levels match new surface levels. If alteration works are needed the works will be arranged by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance structures can only be opened by persons authorised by the water corporation.</p>
D	Maintenance chamber or maintenance shaft	<p><b>Works over maintenance chambers and maintenance shafts are not allowed</b></p> <p>Works <b>adjacent</b> to a maintenance shaft must ensure:</p> <ul style="list-style-type: none"> <li>there is a minimum one metre horizontal clearance from the centreline of the sewer main</li> <li>any footings/foundations extend to a minimum depth to the angle of repose to the invert level of the sewer main, to ensure that no additional load will be placed on the sewer by the structure</li> <li>maintenance shaft cover levels match new surface levels. If alteration works are needed, the works will be done by the relevant water corporation at the applicant's expense.</li> </ul> <p>NOTE: Maintenance structures can only be opened by persons authorised by the water corporation.</p>



Item	Asset	Criteria
E	<b>Water mains, sewer rising mains, vacuum lines and pressure sewers</b>	<b>Works over water mains, sewer rising mains, vacuum lines and pressure sewers are not permitted.</b> NOTE: The relevant water corporation will assess the potential impact of a failed water main, sewer rising main, vacuum line or pressure sewer on individual developments and may ask for clearances of more than one metre. Please contact the relevant water corporation at the design stage to find out the requirements.

## 6.11. Below-ground services, gas, electricity, telecommunications and property drains

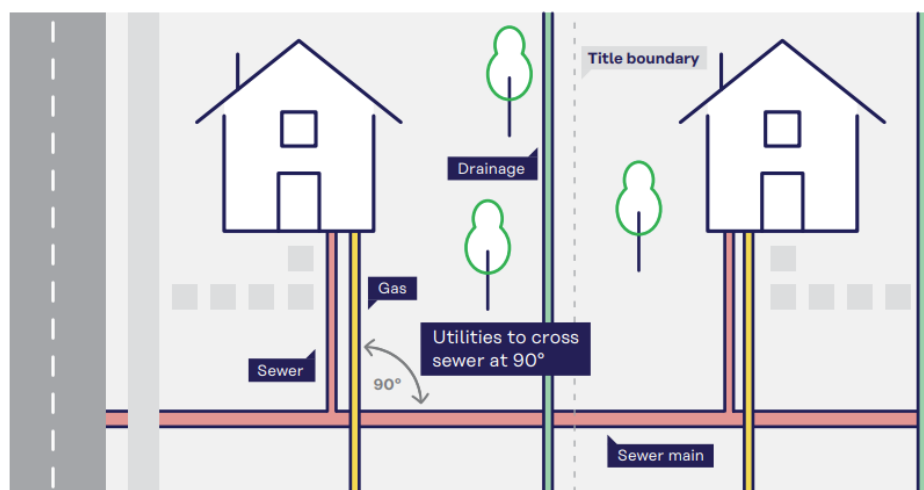
### Clearances between sewers and other underground services

New Service	Minimum horizontal clearance (mm) (note 4)		Minimum vertical clearance (mm)
	Existing sewer size (mm diameter) ≤225	Existing sewer size (mm diameter) >225	
Sewers 225mm diameter and less	300	600	150 (note 2)/300
Sewers greater than 225mm diameter	600	600	300
Gas mains	300	600	150 (note 2)/300
Telecommunication conduits and cables	300	600	150 (note 2)/300
Electricity conduits and cables	500	1000	225 (note 2)/300
Stormwater drains	300	600	150 (notes 2 and 3)/300 (note 3)
Water mains (note 1)	1000	1000	500 (note 3)

NOTE:

1. In the case of water mains, the sewer should always be located below the water main to reduce the possibility of backflow contamination in the event of a burst.
2. A minimum vertical clearance of 300mm applies if the size of either the proposed service or existing sewer is greater than 225mm diameter
3. Sewers should always cross under water mains and stormwater drains
4. Services crossing water corporation assets should do so at a 90-degree angle wherever possible.

Figure 31: Utilities



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