

Method Statement for Cadent Gas Mains Replacement Work – IMGA221101 Endell Street

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Summary

Due to an enforcement policy issued by the Health and Safety Executive (HSE), Cadent Gas have been commissioned to abandon and replace approximately 4km of 48" cast iron medium pressure gas main with new PE main within Westminster, Camden, City of London and Tower Hamlets. This includes a section of gas main located along Shaftesbury Avenue, High Holborn and Endell Street.

In order to reduce the impact of our work on the environment, customers, external stakeholders and the landscape, Cadent replace gas mains via Insertion method, where possible. This consists of pushing a new smaller diameter PE pipe through the existing cast iron gas main.

The existing gas main along Shaftesbury Avenue, High Holborn and Endell Street pass through a number of Root Protection Zones (RPZ) of trees located in the Bloomsbury and Seven Dials Conservation Areas. Therefore, it may be necessary for Cadent to excavate within RPZ's of a number of trees protected Conservation Area status.

Plans of the affected trees which are protected by Conservation Area status can be found in the 'Endell Street – Site Plan' document.

Site Control Measures

Cadent work to NJUG Volume 4 Standards and therefore the following measures have been put in place to minimise the impact on trees throughout the affected streets:

Prohibited Zone of a Tree RPZ (0-1m from Trunk):

- Where excavations are required within the Prohibited Zone, this will be completed via **hand-dig or vacuum excavation** and supervised by an Arborist.
- In the event where a root >25mm diameter is found and Cadent Operations may impact on the root, works will cease immediately and consultation with an Arborist will take place. Roots will only be severed if the Arborist confirms that the severance is unlikely to impact on the trees health and stability.
- If the severance of roots <25mm diameter is required, this will be cut back using a sharp tool to leave the smallest wound.
- If possible, clumps of roots <25mm diameter (including fibrous roots) will be retained in situ without damage. Care will be taken to protect the bark around the roots.
- In an attempt to protect any roots against desiccation and temperature change, any exposed roots located in an excavation will be wrapped with dry sacking immediately after excavation has occurred. If the works are taking place during the summer months, the hessian must be kept damp with a water supply. The sacking will be removed prior to backfilling, which should take place as soon as possible.
- Prior to backfilling, retained roots must be surrounded with topsoil or uncompacted sharp sand, or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.
- There will be no storage of plant, soil, fuel or machinery within the Prohibited Zone.

Precautionary Zone of a Tree RPZ (1m from Trunk – 4 x Tree Circumference):

- Where excavations are required within the Precautionary Zone, this will be completed with a **Blow Out Air Lance or Vacuum Excavator**.
- In the event where a root >25mm diameter is found and Cadent Operations may impact on the root, works will cease immediately and consultation with an Arborist will take place. Roots will only be severed if the Arborist confirms that the severance is unlikely to impact on the trees health and stability.
- If the severance of roots <25mm diameter is required, this will be cut back using a sharp tool to leave the smallest wound.
- If possible, clumps of roots <25mm diameter (including fibrous roots) will be retained in situ without damage. Care will be taken to protect the bark around the roots.
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- Prior to backfilling, retained roots must be surrounded with topsoil or uncompacted sharp sand, or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.
- There will be no storage of plant, soil, fuel or machinery within the Precautionary Zone.

Permitted Zone of a Tree RPZ

- Where excavations are required within the Permitted Zone, this will be completed with a **Mini Excavator, Vacuum Excavator or Blow Out Air Lance**.
- In the event where a root >25mm diameter is found and Cadent Operations may impact on the root, works will cease immediately and consultation with an Arborist will take place. Roots will only be severed if the Arborist confirms that the severance is unlikely to impact on the trees health and stability.
- If the severance of roots <25mm diameter is required, this will be cut back using a sharp tool to leave the smallest wound.
- If possible, clumps of roots <25mm diameter (including fibrous roots) will be retained in situ without damage. Care will be taken to protect the bark around the roots.
- In an attempt to protect any roots against desiccation and temperature change, any exposed roots located in an excavation will be wrapped with dry sacking immediately after excavation has occurred. If the works are taking place during the summer months, the hessian must be kept damp with a water supply. The sacking will be removed prior to backfilling, which should take place as soon as possible.
- Prior to backfilling, retained roots must be surrounded with topsoil or uncompacted sharp sand, or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

Please note the following:

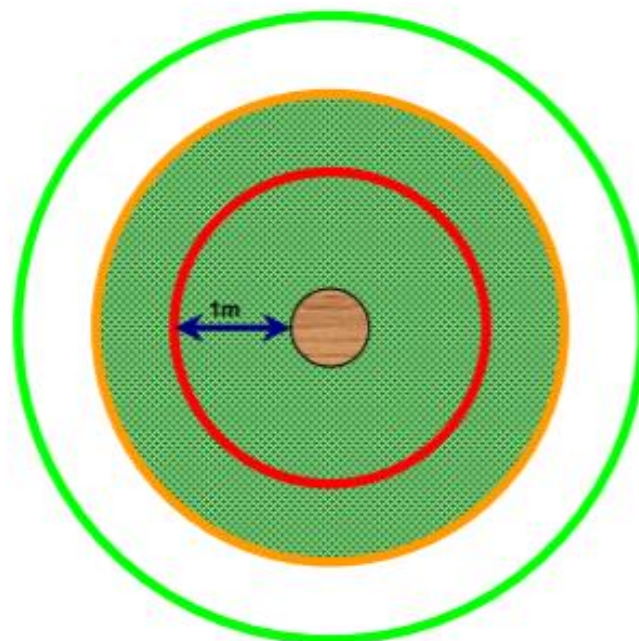
- As per Cadent Operating Procedures, there will be no cutting down, topping or looping of third party trees without prior approval from the stakeholder. Any vegetation clearance taking place between 1st March – 30th September must have Bird Nesting check completed by an authorised ecologist.

- In the event in which a Nesting Bird is found within an excavation, plant or machinery or if Protected Species are found on site, works will cease immediately and the incident reported to the CMO Incident Line.
- In the event of an environmental incident on site, works will cease immediately and the incident reported to the CMO Incident Line.

Appendix 1 – NJUG Guidelines Volume 4

NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees

FIGURE 1 – Tree Protection Zone



Key



Trunk of tree



Canopy or branch spread



PROHIBITED ZONE – 1m from trunk. Excavations of any kind must not be undertaken within this zone unless full consultation with the local authority Tree Officer is undertaken. Materials, plant and spoil must not be stored within this zone.



PRECAUTIONARY ZONE – 4 x tree circumference. Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with the local authority Tree Officer if in any doubt.



PERMITTED ZONE – outside of the precautionary zone. Excavation works may be undertaken within this zone, however caution must be applied and the use of mechanical plant limited. Any exposed roots should be protected.

For CMO Reference Only:

Site: IMGA221101 Farringdon Phase 4		Activity: Ecology, Trees and Hedgerows		Persons Conducting Assessment: Bradley Worrell	
Risk Assessment No: EHS-ERA-003	Review Due Date: August 2023	Revision No: 1.0	Name: Bradley Worrell	Signature:	Date: 09/08/2022
Person Supervising Work: Project Manager		Employer: CMO	Name: Jack Deaney	Signature:	Date: TBC
Persons Exposed:	Employees:	Public/Visitors: X	Public/Visitors: X	Public/Visitors: X	Total at Risk:

Severity	5	5	10	15	20	25	<p><u>Likelihood</u></p> <p>Rating 1 = Very Unlikely Rating 2 = Unlikely Rating 3 = Likely Rating 4 = Very Likely Rating 5 = Almost Certain</p>	<p><u>Severity</u></p> <p>Rating 1 = No Environmental Impact Rating 2 = Minor Impact Rating 3 = Significant Impact Rating 4 = Extreme Impact Rating 5 = Catastrophic, Game Changing</p>
	4	4	8	12	16	20		
	3	3	6	9	12	15		
	2	2	4	6	8	10		
	1	1	2	3	4	5		
		1	2	3	4	5		

Likelihood

Risk = Likelihood x Severity

Acceptable
 Further review
 Unacceptable Risk

Hazard	1	2	3	4	5	6	7	8	9
	Factors of Harm		Risk	Control Measures	Factors of Harm		Residual Risk	Control measures implemented By:	Control Frequency Check Rate
	Likelihood	Severity	Multiple of Columns 1 x 2		Likelihood	Severity	Multiple of Columns 5 x 6		
Working near Trees and Hedgerows	4	2	8	<ul style="list-style-type: none"> When working near to any trees, Operatives to be briefed on NJUG Guidance. NJUG Guidance must be followed at all times. The following additional controls must be adhered to at all times: <ul style="list-style-type: none"> Any excavations within 1m of Trunk must be completed by hand-dig and supervised by an Arborist. All roots >25mm diameter must be retained. All excavations within the Precautionary Zone (under the tree canopy) must only be dug by Hand, Air Lance or Vac Ex. 	2	2	4	Site Manager, Team Leader & Operatives	Daily

				<ul style="list-style-type: none">○ Tree roots >25mm diameter must not be cut unless granted by an Arborist.○ No materials, plant or soil must be stored within the Prohibited and Precautionary Zone (under the tree canopy).○ Any exposed roots left overnight should be protected with Hessian sacking (wet Hessian sacking during the Summer).● Any vegetation clearance (cutting branches, removing sections) must be authorised from the Local Authority. If taking place between 1st March – 30th September, a bird nesting check must be completed prior by a licensed ecologist. Contact Environmental Advisor for support.● In the event on an Environmental Incident on site, Operatives must follow ENV-001 Environmental Emergency Plan.					
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