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K hD Ed KEdZK> ^, d

/••µ	,Ç Œ }v•µoš vš• ñró d vv Œ ^šŒ š >}v }v ^ í ï> hv]š <]vP }u	d =ðð ~ì•îìï o}v }v›ZÇ Œ} lX }u ÁÁÁXZÇ Œ} lX }u
o] vš	,] l] v ,] l] >]u]š l} s]o t]oo] u• >>W	
WŒ}i š v u	íñï &Œ] Œ ^šŒ š Z]vP	
WŒ}i š š]šo	•l ^šµ Ç Z ‰}Œš	
/D Œ (Œ v	îñóïõr,z ryyryyrZWr' ríìì	
WŒ¦Œ (Œ	îñó ' >	
š	ìîlìõlîìîî	

} µu vš WŒ} µ š]}v Z }Œ		
/••µ Eµ	W	E u
WŒ ‰ Œ Ç		:µo] v &}Áo Œ ^ D^ &'^
Z l Ç		v Œ Á : u • ^ ' }o Z}' W &'^
‰‰Œ}		v Œ Á : u • ^ ' }o

} µu vš Z À]•]}v Z }Œ			
/••µ Eµ	^š ¦	š	Z À]•]}v
^î	Wìí	ìîlìõlîìîî	KŒ]P]v o]••µ X

,Ç Œ} l }v•µoš vš• >]u]š ~,Ç Œ} l• Z • ‰Œ ‰ Œ šZ]• Œ ‰}Œš]v }Œ v Á]šZ šZ]v šZ š Œu• }(‰‰}]všu vš (}Œ ,Ç Œ} lU (}Œ šZ •}o v •‰](] µ• }(šZ o] vš v ‰ Œ ÁZ Œ Œ o] v]• ‰o }v šZ]• Œ ‰}ŒšX vÇ šZ]Œ ‰ Œš] • Á} µ• šZ]v(}Œu š]}v }v v}š Œ •‰}v•] o (}Œ vÇ µ• }(šZ Œ ‰}Œš }Œ]š• }vš vš• (}Œ vÇ ‰µŒ‰}• }šZ Œ šZ Œ ‰}Œš Ç vÇ ‰ Œš] • v}š (]v]v ,Ç Œ} l[• ‰‰}]všu všX

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K E d E d ^

y hd/s ^hDD Zz XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
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îX   ^< ^dh z ~ E &/ > Z KEE /^^ E • XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
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ñX hE Zd /Ed/ ^ E >/D/d d/KE^ XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
òX Z KDD E d/KE^ &KZ &hZd, Z tKZ< XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

d o •

d o îXíW ^]š Œ (Œ v]vP]v(}Œu š]}v XXXXXXXXXXXXXXXXXXXXXXXXXXX
d o îXîW ^]š   • Œ]‰š]}v XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
d o îXïW ^]š Z]•š}ŒÇ Œ À] Á XXXXXXXXXXXXXXXXXXXXXXXXXXXíXXXXXXXXX
d o îXðW ' }o}PÇ XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXíîXXXXXXXXX
d o îXñW ‹µ](Œ •Ç•š u XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXíXXXXXXXXX
d o îXòW 'Œ}µv Á š Œ •šŒ š]}v• XXXXXXXXXXXXXXXXXXXXXXXXíXXXXXXXXX
d o îXóW ^µŒ(Á š Œ (šµŒ • XXXXXXXXXXXXXXXXXXXXXXXXXíðXXXXXXXXX
d o îXôW ^µŒ(Á š Œ •šŒ š]}v• XXXXXXXXXXXXXXXXXXXXXXíôXXXXXXXXX
d o îXõW Z Pµo š}ŒÇ]v(}Œu š]}v Á]šZ]v îñìu }(šZ •]š XXXíôXXXXXXXXX
d o îXíìW E šµŒ o •}]o Z u]•šŒÇ XXXXXXXXXXXXXXXXXXXXXXíôXXXXXXXXX
d o ðXíW W}••] o W}ooµš vš >]vl P • ~(}Œ Z]•l > À o• }(D} îŒ š }Œ '

&]PµŒ •

&]PµŒ îXíW ^]š o} š]}v XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
&]PµŒ îXîW ÆšŒ š (Œ}u šZ KŒ v v ^µŒÀ Ç D ‰]v 'Œ}µv •µŒ Z ‰
&]PµŒ îXïW ^š}Œ (Œ}vš À] Á (Œ}u &Œ] Œ ^šŒ šX XXXXXXXXíXXXXXXXX
&]PµŒ îXðW Æ]•š]vP • ŒÀ] • }v &Œ] Œ ^šŒ šX XXXXXXXXXXíXXXXXXXX
&]PµŒ îXñW • u vš o À o }(•šŒµ šµŒ X XXXXXXXXXXXXXXXXXíìXXXXXXXX
&]PµŒ îXòW &]Œ•š •š}ŒÇ }(•šŒµ šµŒ X XXXXXXXXXXXXXXXXXíXXXXXXXX
&]PµŒ îXóW ^µ‰ Œ(]] o ‰}•]š•X XXXXXXXXXXXXXXXXXXXXXXíîXXXXXXXX
&]PµŒ îXôW ^}o] P }o}PÇX XXXXXXXXXXXXXXXXXXXXXXXXXXXíïXXXXXXXX
&]PµŒ îXõW ^ Z u š]] PŒ u }(v šµŒ o Z ol •}oµš]}v (šµŒ ò• XXXXX

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‰ ‰ v] •

‰ ‰ v]ÆŒ Á]vP•

‰ ‰ v]Æ&] o Z }vv]•• v WZ}š}PŒ ‰Z•

‰ ‰ v]Æ]•š}Œ] o KŒ v v ^µŒÀ Ç D ‰•

‰ ‰ v]Æ •l ^šµ Ç Z • Œ Z /v(}Œu š]}v

‰ ‰ v]ÆVŒ o]u]v ŒÇ ' }š Zv] o Z]•l Z P]•š Œ

‰ ‰ v]ÆV& µ•] o ^}µŒ rW šZÁ ÇrZ ‰š}Œ }vš u]v vš >]vl P •

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Æ µš]À ^µuu ŒÇ

^/d /E&KZD d/KE E ^ dd/E'	
K i š]À •	'Œ}µv }v]š]}v• •l ^šµ Ç Z ‰}Œš
o] vš	,] l] v ,] l] >]u]š l} s]o t]oo] u• >>W
^]š v u v o} š]}v	íñï &Œ] Œ ^šŒ šU Z]vPX
WŒ}‰}• À o}‰u vš	dZ •]š À o}‰u vš ‰Œ}‰}• o• Œ µv Œ•š}} š} }u‰Œ]• Œ (v • }v •š}Œ Ç }(šZ µ]o]vP (}Œ Œ •] vš] o v µ• X
^]š • Œ]‰š	dZ •]š]• o} š]v Z]vP]šÇ všŒ U ‰‰Œ}Æ]u š oÇ íìïu •}µ •š š]}vX dZ E š]}v o 'Œ] Z (Œ v }(šZ ‰‰Œ}Æ]u š všŒ }(íóïñóîEX dZ •]š]• ‰‰Œ}Æ]u š oÇ ìXìí ,]v Œ v u •µŒ • % E}ŒšZ Œv }µv ŒÇ t &Œ] Œ ^šŒ š v ‰Œ]u ŒÇ •]š ••X ^}µšZ ŒvU •š Œv v t •š Œv }µv ŒÇ t }uu Œ] o • o • •šŒµ š
^< ^dh z ^hDD Zz	
d}‰}PŒ ‰ZÇ	dZ •]š]• P v Œ ooÇ o À o š ‰‰Œ}Æ]u š oÇ ðóu K X
,Ç Œ}o}PÇ	dZ dZ u • Œ]À Œ o] • ñïìu v}ŒšZ •š }(šZ •]š v šZ < vv š Œ] }(šZ •]š X
^]š ,]•š}ŒÇ	dZ •]š Æ]•š • }uu Œ] o }Œ Œ •] vš] o µv]š (Œ}u íôóõ ~ C •]š µv ŒÁ vš]šZ Œ v Æš v•]}v }Œ Œ •]Pv šÁ v íõìì v íõí µŒŒ vš •šŒµ š
' }o}PÇ	^µ‰ Œ(]] oW d ‰o}Á 'Œ À o D u Œ r ^ v v PŒ À oU o} ooÇ Á ‰ šX Œ} lW ^ (}Œ Z ol &}Œu š]}v r &]Œu ÁZ]š Z ol Á]šZ }v•‰] µ v} µo Œ v š µo Œ (o]vš • u•X , Œ PŒ}µv • v šZ]v u Œo• Œ •X ^}u (o]vš v} µo • Œ o ŒP š} À ŒÇ o ŒP X
E šµŒ o P }o Z Ì Œ •	ñ E}X Z ol À]š] • Á Œ] vš](] Á]šZ]v ñìïu •µŒŒ}µv]vP šZ •] Z ol À]š] • Œ }Œ }v •]š X dZ o}• •š À]šÇ Œ }Œ o] • íóìu
,Ç Œ}P }o}PÇ	dZ •]š]• µv Œo]v Ç ^ }v ŒÇ ‹µ](Œ Á]šZ]v šZ d ‰o}Á ' WŒ]v]‰ o ‹µ](Œ Á]šZ]v šZ ^ (}Œ Z ol &}Œu š]}v
hyK Z]•l	dZ v}vr•‰] o]•š hyK • Œ v]vP Æ Œ]• Z •]v] š v} (µŒšZ Œ Á]šZ Œ P Œ š} hyK]v Œ o š]}v š} PŒ}µv]vÀ •š]P š]}vX
^^ ^^D Ed E KE >h^/KE^	
WŒ o]u]v ŒÇ vÀ]Œ}vu vš }v oµ•]}v•	• }v Z]•š}Œ] o o v µ• • v]š• µŒŒ vš }‰ Œ š]}v o µ• U šZ }vš u]v š]}v š šZ •]š]• }v•] Œ š} o}Á (}Œ šZ µŒŒ vš dZ }À Œ oo Œ]•l (}Œ Œ À o}‰ •]š]• •• •• š} o}ÁU • o} }vš]v]vP u š Œ] o• Á]šZ]v šZ µ]o]vP (Œ] Œ u v P]v }(,]PZ Œ]•l š} }v•šŒµ š]}v Á}Œl Œ• v v µ• Œ• (Œ}u vÇ • •š}• µ]o]vP v }ÁvPŒ š} o}Á Œ]•l ‰Œ}À] oo Á}Œl Á]šZ • }Œ v Á]šZ šZ }všŒ}o }(• •š}• Z Pµo š]}v• ~ Z îìííî•X /(‰ Œ u}À o Á]oo Œ ‹µ]Œ ‰Œ]}Œ š} Œ (µŒ]•Zu všX Z u}À o µv •Z}µo o]u]š Œ o • }((] Œ • š} šZ]Œ v šZ PŒ}µv X /š]• }v•] Œ µvo]l oÇ šZ š šZ •]š Á}µo o ••](] • }vš u]v î }(šZ W íõõìX dZ ‰}••] o ‰}ooµš vš o]vl P • }v v µvrŒ u] š •]š š Œu]v Á olr}À Œ Œ •µuu Œ]• o}Á (}Œ Œ]•l o À o• }(u} Œ š }Œ PŒ

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íX /EdZK h d/KE

íXí d Œu• }(Œ (Œ v

/v µPµ•š îìîîU ,Ç Œ} l }v•µoš vš• >]u]š ~,Ç Œ} l• Á • }uu]••]}v l} s]o t]oo] u• >>W š} µv Œš l WZ • í •l •šµ Ç š šZ •]š o}

dZ •]š]• µŒŒ všoÇ šZŒ r•š}Œ Ç š ŒŒ µ]o]vP Á]šZ •u o •]Pv š (}Œ }uu Œ] o µ• X

,Ç Œ} l µv Œ•š v • šZ š šZ (]Œ•š v • }v •š}Œ Ç }(šZ Æ]•š]vP Œ •] vš] o µ• X dZ •]š ~d]šo Wo v <ðôôíñõ•]• ‰Œ • vš]v ‰‰

dZ]vÀ •š]P š]}v Á}Œl• Z À v µv Œš l v]v }Œ v Á]šZ ,Ç Œ} ~îñóïõr,z ryyryyr&WŕĐ µPìµíŠ ïîîîî• v šZ o] vš[•]v•šŒµ š]}v• š} ‰C íîšZ}(µPµ•š îìîî•X

íXî K i š]À •

dZ Á}Œl• Z À v }uu]••]}v š} •µ‰‰}Œš ‰o vv]vP •µ u]••]}v µv

dZ } i š]À • }(šZ WZ • í •l ^šµ Ç Œ š} (}Œuµo š ‰Œ o]u]v }v ‰šµ o ^]š D} o }(šZ •]š š}] vš](Ç v u l ‰Œ o]u]v ŒÇ vÀ]Œ}vu vš o v P }š Zv] o Œ]•l• š} šZ ‰Œ}‰}• À o}‰u všX

íXï ^ }‰

dZ • }‰ }(šZ WZ • í •l ^šµ Ç }u‰Œ]• •W

- x (] o Œ }vv]•• v ~Á ol}À Œ• š} š Œu]v šZ v šµŒ }(šZ •]š µŒŒ vš v (}Œu Œ o v µ• •U š}‰}PŒ ‰ZÇ v ZÇ Œ}o}PÇV
- x ‹µ]•]š]}v v Œ À] Á }(W
  - i Z]•š}Œ] o KŒ v v ^µŒÀ Ç u ‰•U š}] vš](Ç vÇV (}Œu Œ ‰}š š šZ •]š v]uu] š oÇ •µŒŒ}µv]vP]šU v v •• ••u vš }(š Œ]•l•V
  - i šZ]Œ r‰ ŒšÇ vÀ]Œ}vu vš o Œ ‰}Œš š}] vš](Ç vÇV (o}}]vP ‰}ooµš]}v]v] vš•U •šŒ š]}v•U vÀ]Œ}vu vš o ‰ Œu]š• š X ‰}š vš] o š} Z À vÀ]Œ}vu vš o]u‰ š }v šZ •]š V
  - i š}‰}PŒ ‰Z] oU P }o}P] o v ZÇ Œ}P }o}P] o u ‰•V
  - i Œ]š]•Z ' }o}P] o ^µŒÀ Ç ~ '^• Œ Z]À Œ }Œ •V
  - i Œ P]}v o hyK Œ]•l u ‰•V
  - i •]š r•‰](] E šµŒ o Z ol À]š] • v D]v]vP š • ^ Œ ZV
- x À o}‰u vš }(‰Œ o]u]v ŒÇ 'Œ}µv D} o Œ ‰Œ • vš]vP PŒ}µv
- x À o}‰u vš }(v]v]š] o }v ‰šµ o ^]š D} o ~] ^D•U]v oµ]vP] }vš u]v vš o]vl P •V
- x ‹µ o]š š]À •• ••u vš }(vÇ P }r vÀ]Œ}vu vš o Œ]•l•] vš](] V
- x] vš](] š]}v }(vÇ ‰o µ•] o P }š Zv] o Z Ì Œ •X

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íXð À]o o]v(}Œu š]}v

dZ (}oo}Á]vP } µu vš• Z À v Œ À] Á Ç ,Ç Œ} l (Œ}u ‰µ o] oÇ ‰Œ ‰ Œ š]}v }(šZ]• Œ ‰}ŒšW

x Œ Á]vP Eµu Œ îôðòììîWíX Æ]•š]vP v ‰Œ}‰}• ‰o v•U íñï &Œ Œ Z]š š•

/š]• ••µu šZ š ,] l] v ,] l] >]u]š l} s]o t]oo] u• >>W Z À (}Œ }vš vš•X

íXñ Z Pµo š}ŒÇ }vš Æš v Pµ] v

dZ]vÀ •š]P š]}v Á}Œl Z • v ŒŒ] }µš]v P v Œ o }u‰o] v Á]š]v oµ]vP ~ µš v}š o]u]š š}• ^ ñõïìWîìíñ= íWîìîìU ^ íìíóñWîìíí= îW Z'}} WŒ š] 'µ] o]v • (}Œ ^]š /vÀ •š]P š]}v•[X

dZ P }r vÀ]Œ}vu vš o • š]}v }(šZ]• Œ ‰}Œš]• ÁŒ]šš v]v Œ} îWîìíóU > ZD ~îìîí• v šZ '^ ~îìì ò• –'}} WŒ š] 'µ] o]v • (}Œ

dZ u šZ} • µ• (}oo}Á Œ]•lr • ‰‰Œ} ZU šZ (]Œ•š •š P }(ÁZ (] o Œ }vv]•• v U Á]šZ vÇ ‰}š vš] o P }r vÀ]Œ}vu vš o Œ]•l• •• µ•]vP šZ Z•}µŒ r‰ šZÁ ÇrŒ ‰š}Œ }vš u]v vš o]vl P [}v ‰š š} vÀ]Œ}vu vš o WŒ}š š]}v š íõõì ~ W U íõõì•X vÇ ‰}š vš] o P }š šZ WZ • í •l •šµ Ç v •]š Œ }vv]•• v •š P X

WŒ}(••]}v o iµ P u vš]• µ• š} À oµ š šZ (]v]vP• }(šZ Œ]•l •• Œ }uu v š]}v• (}Œ šZ À o}‰u všX

tZ Œ Œ o À vš šZ Œ o À vš Œ ‹µ]Œ u vš• }(šZ µŒŒ vš]š]}v }(‰‰o] X

dZ P }r vÀ]Œ}vu vš o v P }š Zv] o •‰ š• Œ]• µ••]v • ‰ Œ Œ ‰}Œš šZ š Œu ZP }š Zv] o[ ]• µ• š} • Œ] •‰ š• Œ o š]vP ~•µ Z • (}µv š]}v Œ ‹µ]Œ u vš••X dZ š Œu ZP }r vÀ]Œ}vu vš o[ ]• P Œ}µv rŒ o š vÀ]Œ}vu vš o]••µ • ~•µ Z • ‰}š vš] o }vš u]v š]}v ‰‰Œ] š šZ š šZ]•]• v]vš PŒ š]vÀ •š]P š]}v v šZ • šÁ} u]•]Pv Œ• •Z}µo š l oo •‰ š• }(šZ]vÀ •š]P š]}v]vš} }µvšX

Z u]v]vP µv Œš]vš] • v Œ }uu v š]}v• (}Œ (µŒšZ Œ Á}Œl Œ o] Œ •‰ š]À oÇX

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îX ^< ^dh z ~ E &/ > Z KEE /^^ E •

îXí š

vµu Œ }(•l •šµ Ç •}µŒ • Z À v µ• š} •• u o šZ (}oo}Á]vP ‰Œ • vš]v ‰‰ v]Æ v]v oµ W

- x dZ]Œ r‰ ŒšÇ vÀ]Œ}vu vš o Œ ‰}Œš ~'Œ}µv •µŒ Œ ‰}ŒšU Œ (
- x ,]•š}Œ] o KŒ v v ^µŒÀ Ç u ‰‰]vPV
- x '^ Œ Z]À Z }Œ •V
- x • š] hy Z]•[illegible]
- x E šµŒ o Z ol À]š] • v D]v]vP š • ^ Œ Z ~^š vš & šµ o šZ •]š š íñï &Œ] Œ ^šŒ šU Z]vPU Œ (W ïïîñíííòô•V

îXî ^]š Œ (Œ v]vP

d o îXíW ^]š Œ (Œ v]vP]v(}Œu š]}v

/š u	Œ] (• Œ]‰š]}v
^]š v u	íñï &Œ] Œ ^šŒ š
^]š Œ ••	íñï &Œ] Œ ^šŒ šU Z]vPU Z'í í,
^]š o} š]} PŒ] Œ (Œ	dZ •]š]• o} š]v Z]vP]šÇ všŒ U ‰‰Œ}Æ]u š oÇ íìu •š š]}vX dZ E š]}v o 'Œ] Z (Œ v }(šZ ‰‰Œ}Æ]u š všŒ }(šZ • dZ •]š]• ‰‰Œ}Æ]u š oÇ ìXìí ,]v Œ v u •µŒ • ‰‰Œ}Æ
^]š }µv Œ	E}ŒšZ Œv }µv ŒÇ t &Œ] Œ ^šŒ š v ‰Œ]u ŒÇ •]š ••X ^}µšZ ŒvU •š Œv v t •š Œv }µv ŒÇ t }uu Œ] o • o • •šŒ

&]P îíW ^]š o ~Z ‰Œ} µ Á]šZ ‰ Œu]••]}v (Œ}u 'Œ}µ

&]P îîW ÆšŒ š (Œ}u šZ K]v 'Œ}µv Z ‰µŒŒšX ~K^ o] vïñîì•

•]š o} š]}v ‰o v]• ‰Œ • vš]v ‰‰ v]Æ X

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îXï ^]š • Œ]‰š]}v v (] o Œ }vv]•• v •µŒÀ Ç

(] o Œ }vv]•• v •µŒÀ Ç Á}(µ µPŒ•šš lîìîìîš}îðÀ]•µ ooÇ] vš](Ç •• ‰}š vš] o P }š Zv] o Z Ì Œ •U }vš u]v vš •}µŒ • (}Œ (µšµŒ]vÀ • ‰}••] o •}µŒ r‰ šZÁ ÇrŒ ‰š}Œ o]vl P •X dZ Á šZ Œ µŒ]vP šZ •µvvÇ v îî PŒ • o]µ•X

• Œ]‰š]}v }(šZ •]š]• ‰Œ • vš]v d o îXî v • o š ‰Z}š}P š} &]PµŒ îXòX]š]}v o ‰Z}š}PŒ ‰Z• Œ ‰Œ • vš]v ‰‰ v]Æ

d o îXîW ^]š • Œ]‰š]}v

/š u	Œ] (• Œ]‰š]}v
^]š ••	dZ •]š Á • •• (Œ}u šZ PŒ}µv (o}}Œ }(&Œ] Œ ^šŒ šX
^]š Œ	dZ •]š]• Œ š P}v o]v •Z ‰ v Z • v Œ }(‰‰Œ}Æ]u š oÇ
o À š]}vU š}‰}PŒ % vÇ P }u}Œ‰Z (šµŒ •	dZ •]š]• •]vPo š ŒŒ ï •š}Œ Ç µ]o]vPU Á]šZ PŒ}µv o Á }À KŒ v v šµu ~K •X dZ •]š]• š}‰}PŒ ‰Z] ooÇ •o]PZšo }šZ Œ •µŒŒ}µv]vP Œ • }(Z]vP]šÇ všŒ X
^]š }µv v •µŒŒ}µv o v	E}ŒšZ Œv }µv ŒÇ t &Œ] Œ ^šŒ šU }uu Œ] o µ•]v •• •X Z ‰‰Œ}Æ]u š oÇ îìiu v}ŒšZ }(•]š X ^}µšZ Œv }µv ŒÇ t &µŒšZ Œ }uu Œ] o •š}Œ P Œ • ~ • }v µ]o]vP• •š Œv }µv ŒÇ t v Œ Œ • Œ Z h< •š}Œ (Œ}vš v µvlv}Áv }v uµ• µu v d}Áv , oo o} š íîìu •š }(šZ •]š X t •š Œv }µv ŒÇ t ^š dŒ À o •š}Œ (Œ}vš v µvlv}Áv }v µ‰‰ Œ }uu Œ] o µ•]v •• • o} š š} šZ Á •š }(šZ •]š o}vP &Œ] Œ
WŒ • vš d µ•	dZ •]š]• µŒŒ všoÇ µ• • šZ ‰Œ u]• • (}Œ ,] l] • Dµ•] ^Z}% • u vš v šÁ} µ‰‰ Œ o À o• Œ µ• µŒŒ všoÇ • •š}Œ P Œ '•U d v Á š Œ • ŒÀ] v}š }v ‰ À u vš }À Œ• }µš•] }(‰Œ
s P š š]}v	E}v } • ŒÀ
' v Œ o •] • v•]š]À]š	^]š]• µŒ v v o} š Á]šZ]v Z]vP]šÇ všŒ X dZ •]š]• Á]šZ]v P v Œ ooÇ }uu Œ] o Œ Á]šZ u}•š PŒ}µv Ç •š}Œ (Œ}vš•X u‰ •u oo Á • v}š]v • u vš o À o Á]šZ Zµu]](] Œ Œµvv]vP

^]š •µŒÀ Ç •l š Z • Á]šZ Æ]•š]vP]u v•]}v• ‰Œ}À] Ç šZ o] vš

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&]P|î ï\^š}Œ (Œ}vš À] Á (›

&]P î¿W Æ• ŒÀ] • }v &

&]PµŒ îXñW • u vš o À o }(•šŒµ šµŒ X

&]PµŒ îXòW &]Œ•š •š}ŒÇ }(

îXð ^]š Z]•š}ŒÇ

•šµ Ç }(Z]•š}Œ] o KŒ v v ^µŒÀ Ç u ‰• ~ ‰‰ v]Æ • Z • v µ
o v µ• • š šZ •]š v •µŒŒ}µv]vP Œ • ÁZ] Z u Ç Z À P }š Zv]
]u‰o] š]}v• (}Œ šZ ‰Œ}‰}• À o}‰u všX dZ l Ç (]v]vP• Œ •µ

d o îXïW ^]š Z]•š}ŒÇ Œ À] Á

Z (Œ v	< Ç (šµŒ • }v •]š	< Ç (šµŒ • }((r•]š
}µvšÇ ^ Œ íôóõW íWî E íWñìì	^]š]• ‰Œ • vš •]šZ Œ Œ •] vš] o ‰Œ}‰ ŒšÇ Á] Œ]v šZ •}µšZX ^]š }ł Œ }(‰Œ •µu Z Œ •š Ç•}v }µŒšX	îìu •}µšZ t ,}Œ• Z ‰}•]š}ŒÇ ‰Œ • v õìu •š t ŒŒ] P D vµ(š}ŒÇ ‰Œ íìiu v}ŒšZ t Z}Ç o ,}Œ• v ŒŒ] P Z ‰}•]š}ŒÇU Á]šZ o]À ŒÇ •š o • ‰Œ íîìu •}µšZ •š t }Œv Æ Z vP ‰Œ • íñìu v}ŒšZÁ •š t D ošZ}µ• ‰Œ • vš íñìu •š t d}Áv , oo WŒ • vš îìiu r îñìu v}ŒšZ t Z]vP šŒ]v •š š ‰Œ • vš îðìu Á •š t s š Œ]v ŒÇ /v(]Œu ŒÇ ‰

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Z (Œ v	< Ç (šµŒ • }v •]š	< Ç (šµŒ • }((r•]š
		îòìu ^}µšZ t z] o , oo &}µv ŒÇ ‰Œ ïìiu v}ŒšZÁ •š t Z](o (š}ŒÇ ‰Œ •
}µvšÇ ^ Œ íõìiW íWîf	E} Z vP	íñìu v}ŒšZ •š t }v•šŒµ š]}v }(• À µ]o]vP• Z • } µŒŒ v}ŒšZ }(s o‰ Z](o & š}ŒÇU D ošZ}µ• v ŒŒ] D vµ(š}ŒÇ v} o}vP Œ ‰Œ • vš
}µvšÇ ^ Œ íõíîW íWîf	Ç•}v }µŒš v} o}vP Œ ‰Œ }v•šŒµ š]}v Z • } µŒŒ v}Á (µooÇ š ŒŒ v Z •šŒµ šµŒ o (}}š‰Œ]všX	s š Œ]v ŒÇ /v(]Œu ŒÇU >]À ŒÇ ^š ,}Œ• v ŒŒ] P Z ‰}•]š}ŒÇ v} o}v ‰Œ • vš v}ŒšZ }(•]š X >]À ŒÇ ^š o o oo • ‰ Œš }(šŒ]v •š š]}vX Æ‰ v Œ]o v šÁ}Œl ‰Œ • vš Á]šZ •š š]}vX
}µvšÇ ^ Œ íõïíW íWîf	E} Z vP	&}µv ŒÇ v} o}vP Œ ‰Œ • všX &}Œu ^š o Œ ~v}Á ‰ Œš }(šŒ]v •š š] v Á µ]o]vP• ~µ• v}š o oo •X
E š]}v o 'Œ íõñò r íõñ íWíîñì	E} Z vP	íì r ôìu v}ŒšZ t P Œ P ‰Œ • vš v u}o]š]}vl }v•šŒµ š]}v Z • } µŒŒ v}ŒšZ }(šZ •]š X K‰ v Œ µŒŒ v Œ}•• šZ Œ} (Œ}u šZ •]š X ííìu •}µšZ Á •š t Œ Z }o}PÇ (]v v}š ~Z}u v }]v•• íñìu v}ŒšZ t dŒ]v •š š]}v Æ‰ v o oo • P Œ P X íòìu v}ŒšZ •š t Á}Œl• ‰Œ • vš v}Œ ^šŒ š îìiu v}ŒšZ Á •š t Œ Z }o}PÇ (]v v} ~u] À o ‰}šš ŒÇ• îñìu v}ŒšZ Á •š t & š}ŒÇ ‰Œ • vš îñìu •}µšZ •š r Œ ‰ Œl v}Á ‰Œ •
E š]}v o 'Œ íõòîX íWíî	E} Z vP	íìu v}ŒšZ t vl v}Á ‰Œ • vš]v (}Œu u‰šÇ Œ X }Œv Æ Z vP v} o}vP Œ ‰Œ • všX
E š]}v o 'Œ íõóïX íWíì	E} Z vP	ðñìu t ñìiu •}µšZ t î E}X Œ Á Œ] • v (š}ŒÇ ‰Œ • všX
E š]}v o 'Œ íõóô r íõó íWíîñì E íWíìiìì	E} Z vP X	ôìu v}ŒšZ t P Œ P v} o}vP Œ ‰Œ • îìiu v}ŒšZÁ •š t uµoš] •š}Œ Ç Œ ‰ ‰Œ • všX îìiu v}ŒšZ •š t šŒ]v •š š]}v Œ ‰ ‰Œ • vš
E š]}v o 'Œ íõôò r íõô íWíîñì	E} Z vP X	íôìu v}ŒšZÁ •š t Œ}}(š}‰ Œ ‰ Œl 9 îìiu v}ŒšZÁ •š t µ• •š š]}v o}Á oµ îñìu v}ŒšZ •š t Œ ‰ Œl v}Á o oo Wo Ì X ðìiu •}µšZÁ •š t Œ} •šŒ š u oo ‰ ðìiu •}µšZ •š t ‰}š v Œ ‰ Œl %

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îXñ ' }o}PÇ

dZ P }o}PÇ }(šZ •]š Œ]• •Z}Áv }v šZ íWíìUììì Œ]š]•Z ' }o}P]
Œ ‰Œ} µ • ‰ Œš }(šZ 'Œ}µv •µŒ Œ ‰}Œš v]• •µuu Œ]• o

d o îXðW ' }o}PÇ

Z (X &]Pµ	>} š]}v	^šŒ š]PŒ ‰	• Œ]‰š]}v
^µ‰ Œ(]] o ‰}•]š• ~&]PµŒ îXó•			
í	Kv •]š X	d ‰o}Á 'Œ À D u Œ	^ v v PŒ À oU o} ooÇ Á]šZ o v• • }(•]o
î	íìiu v}ŒšZ •}µšZ	ooµÀ]µu	^}(š •]oš• v o Ç•X
^}o] ' }o}PÇ ~&]PµŒ îXô•			
í	Kv •]š X	^ (}Œ Z o &}Œu š]}v	&]Œu ÁZ]š Z ol Á]šZ }v•‰] µ}µ• • u]r }vs v} µo Œ v š µo Œ (o]vš • u•X , Œ PŒ}µ u Œo• Œ lv}Áv (Œ}u šZ o}Á •š •X ^}u v} µo • Œ o ŒP š} À ŒÇ o ŒP X

&]P îćW ^µ‰ Œ(]] &]P îćW ^}o] P
~Z ‰Œ} µ Á]šZ ‰ Œu]••]}v (Œ}u 'Œ}µv~Ƶ‰Œ} µ Á]šZ ‰ Œu]••]}v (Œ}u 'Œ}µv •µŒ •

vµu Œ }(}Œ Z}o o}P• (Œ}u šZ '^ Œ Z]À Z À v Œ À] Á X ^ o}ÁW

x ^hóó^tóðU o} š ñìu š} šZ •š }(šZ •]š U š} šZ ^}µšZ }(^š > ‰šZ }(ôXìiu v Œ }Œ W

i D 'Œ}µv šÁ v PŒ}µv o À o v ñXòu o}Á PŒ}µv o À o ~

i Z ol šÁ v ñXòu v ôXìu PoV

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îXòX'ðŒ}µv Á š Œ (o}}]vP

dZ vÀ]Œ}vu vš o š Á]šZ]v šZ 'Œ}µv •µŒ Œ ‰}Œš]v] š • u} (o}}]vPX

îXó ,Ç Œ}o}PÇ

îXóXíµŒ(Á š Œ •Ç•š u v Œ]v P

dZ •µŒ(Á š Œ (šµŒ •]v šZ À]]v]šÇ }(šZ •]š Œ o]•š]v d š Zu vš Œ }µv Œ] •U • •š š }À X

d o îXóW ^µŒ(Á š Œ (šµŒ •

& šµŒ	>} š]}v Z o š]À š} ^]š
dZ u • Z]À Œ	ñïìu v}ŒšZ •š
< vv š Z]À Œ	ïììu •}µšZ •š

îXóXîµŒ(Á š Œ •šŒ š]}v• v]• Z ŒP •

d o îXô •µuu Œ]• • šZ š]À o] v• •µŒ(Á š Œ •šŒ š]}v• Á]

d o îXôW ^µŒ(Á š Œ •šŒ š]}v•

>} š]}v Z o š]À š} ^]š	WµŒ‰}• }(•šŒ š]}v
ðìïu •}µšZ	> l v ‰}v šZŒ}µPZ(o}ÁX

dZ Œ Œ µŒŒ všoÇ v} š]À o] v• •µŒ(Á š Œ]• Z ŒP • Á]š

îXóXíµŒ(Á š Œ ‹µ o]šÇ

Z (Œ v š} šZ vÀ]Œ}vu vš P v Ç Á •]š •Z}Á• šZ •]š]• o} š šZ ,}oÇ Œ}}l Z]À Œ •]v]•šŒ] šX dZ µŒŒ vš ~îìíõ Ç o î• }À Œ &Œ u Á}Œl]Œ š]À]• • Œ] • Z&]o[(}Œ Z u] o v ^D} Œ š _

dZ Œ •}v (}Œ šZ Á š Œ } Ç µŒŒ všoÇ Z À]vP Zu} Œ š [}o}P }ÆÇP v• o À o• v D Œ}‰ZÇš • v WZÇš} všZ}• ~ }u]v •X

dZ Œ •}v (}Œ šZ Á š Œ } Ç µŒŒ všoÇ Z À]vP Z&]o[Z u] o •š šZ Œ• ~W •X

îXóXðµŒ(Á š Œ (o}}]vP

dZ •l •šµ Ç]v(}Œu š]}v]v] š • šZ ‰Œ}‰}• À o}‰u vš]• v}š (Œ}u •}µŒ }v •]š U Z}Á À Œ šZ Œ]• Z]PZ Œ]•l }(í]v ïì Ç Œ Á š Œ (o}} ‰‰Œ}Æ]u š oÇ ñìu •}µšZ }(šZ •]š X] š (o}} Œ µv Œš l v Ç •‰] o]•šX

îXô D]v]vP v u]v Œ o ÆšŒ š]}v

dZ •]š]• v}š Á]šZ]v v Œ }(Œ }Œ u]v]vPU Z}Á À Œ šZ 'Œ}µv ‰}]vš v šµŒ o À]š] • Á]šZ]v îñì u š Œ• }(šZ •]š X dZ 'Œ}µv •µŒ •]š o] •]v v Œ }(^^‰}Œ] µv ŒPŒ}µv u]v]vP }(Œ •šŒ] š A

• Œ Z }(šZ ^š vš D]v]vP À]š] • š •]v] š šZ š šZ Œ Œ Œ }Œ • Á]šZ]v ìXñlu }(šZ •]š všŒ X dZ o}• •š Œ }Œ u]v]vP òôìu •}µšZ }(šZ •]š]v šZ (}Œu }(Œ }Œ •µ •] v À vš }À Œ oo ‰]šX

dZ Œ Œ v} Œ }Œ • Z o Ç šZ '^ }(Z]•š}Œ] o µv ŒPŒ}µv Á}Œ •]š }µv ŒÇ v šZ '^ }v•] Œ šZ š ^•‰}Œ] µv ŒPŒ}µv u]v]vP } µŒŒ X W}š vš] o (}Œ](() µoš PŒ}µv }v]š]}v• Œ µvo]l oÇ v šZ Ç v v}š }v•] Œ _X

îXõ E šµŒ o PŒ}µv]v•š]o]šÇ

dZ •]š]• µv Œo]v š •Z oo}Á ‰šZ Ç ‰}š vš] ooÇ •}oµ o •šŒ š Á]šZ ‰}š vš] ooÇ ‰rÁ š Œ š o X dZ Œ]• Œ]•l }(À}] •]vP Z olX dZ]•]•]• µ••]v u}Œ š]o o}Á ~^ š]}v îXíì•X

îXíì E šµŒ o Z ol À]š] •

îXíìXí lPŒ}µv

dZ •]š]• µv Œo]v š •Z oo}Á ‰šZ Ç ‰}š vš] ooÇ •}oµ o •šŒ š Á]šZ ‰}š vš] ooÇ ‰ Á š Œ š o v šZ Œ]• ‰}š vš] o Œ]•l }( ]••}oµš]}v }(šZ Z olX

• •Z}Áv]v &]PµŒ îXõU]••}oµš]}v (šµŒ • v]v oµ À}] •U }oo Á] v]• }vš]vµ]š] •]v šZ Z ol Á]šZ]••}oµš]}v ‰]‰ X ^µ •] v • PŒ vµo Œ u š Œ] o• }oo ‰•]vP]vš} šZ Z ol]••}oµš]}v (šµŒ •X ‰šZ }oo ‰•]vP]vš}]••}oµš]}v À}] U µ•]vP À}] š} u]PŒ š µ š šZ •µŒ(X

dZ ‰Œ • v }(o Ç Œ• }(v• }Œ u vš u š Œ] o• }Œ }Z •]À o Ç À}] Œ Z]vP šZ •µŒ(U µš Œ š]vP ‰}š vš] o (}Œ •µŒ(•µ • Z vP X dZ }oo ‰• }(u š Œ] o•]vš} À}] • v µ•]šZ Œ À}] •U }(Æš v]v Ì}v •µŒŒ}µv]vP šZ všŒ o }Œ }(šZ }oo ‰• u š Œ

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îXíî Z Pµo š}ŒÇ /v(}Œu š]}v

/v(}Œu š]}v]v šZ 'Œ}µv ^µŒ Z ‰}Œš ~ ‰‰ v]Æ •U Œ o š]vP š} À Œ À] Á U Á]šZ •µuu ŒÇ ‰Œ • vš o}Á]v d o îXõX š}š o }(ï ‰Œ • vš Á]šZ]v îñìu }(šZ •]š X

d o îXõW Z Pµo š}ŒÇ]v(}Œu š]}v Á]šZ]v îñìu }(šZ •]š

Eµu Œ	]•š v (^]š	š]o•	W}š vš] o	}uu vš
	îòu E	íñU &Z/ Z ^dZ dU Z /E'U Z'í í X]•]v]v Œ š]}v v •}C rv šµŒ]vP }(}vš (}Œ]•‰}• oX	t •š u]PŒ š]}v š}Á Œ • •	>]l oÇ š} •µ i š š} •šŒ] š }všŒ}o•U ‰}š vš] o Œ]•l }v•] Œ À ŒÇ o}ÁX
í	ôïu Et	îñ &Œ] Œ ^šŒ š Z'í í WX Œµ•Z]vP (oµ}Œ • vš šµ •	t •š u]PŒ š]}v š}Á Œ • •	
î	îïòu E	‰ Æ Wo Ì &}Œ µ(Z]vP Œl•Z]Œ Z ^š}Œ P }(Á •š]v Wo X	t •š u]PŒ š]}v š}Á Œ • •	^]Pv](] vš]•š v (Œ}u •]š X

îXíï E šµŒ o •}]o Z u]•šŒÇ

/v(}Œu š]}v }vš]v Á]šZ]v šZ vÀ]Œ}vu vš o Œ ‰}Œš ~ ‰‰ v]Æ }v všŒ š]}v À oµ • (}Œ šZ v šµŒ o •}]o• š šZ •]š (}Œ • o š]}v }v Œv ~ }W •X dZ • Z À v Œ ‰Œ} µ]v d o îXíìX

d o îXíìW E šµŒ o •}]o Z u]•šŒÇ

o u vš	Œ• v	u]µı	ZŒ}u]	>	E] l o
}v všŒ š]}v	íñ	DíXô	òì r õì	íìì	íñ r ïì

îXíðZ }v

dZ Œ }v Œ]•l]• Œ ‰}Œš Ç Œ (Œ v š} šZ /v] š]À šo • }(Z o îìì ó• v vv Æ u ‰•]v Z îíí ~^]ÀÇ Œ îìíñ•X

dZ Pµ] v v]v(}Œu š]}v]v šZ 'Œ}µv •µŒ vÀ]Œ}vu vš o Œ ‰}Œ Œ ((š v šZ •]š]• v}š]v Z }v ((š Œ šZ Œ (}Œ v} Œ Œ ‹µ]Œ X

îXíñhv Æ‰o} }Œ v v ~hyK•

dZ v}vr•‰] o]•š hyK • Œ v]vP Æ Œ]• Z •]v] š v} (µŒšZ Œ š} hyK]v Œ o š]}v š} PŒ}µv]vÀ •š]P š]}vX &µŒšZ Œ •• ••u vš u }v•šŒµ š]}v š]À]š] •X }‰Ç }(šZ hyK u ‰ (Œ}u • š] hyK]•]v

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îXíò }v•µoš š]}v•

v v‹µ]ŒÇ Á • •µ u]šš š} šZ vÀ]Œ}vu vš o , ošZ ‰ ŒšŠu vš }(Z
µPµ•š îìîî Œ ‹µ •š]vP Œ À] Á }(šZ]Œ Œ }Œ • (}Œ Œ o À vš]v(}Œ
•• ••u všX š šZ š]u }(Œ ‰}Œš ÁŒ]š]vPU Œ •‰}v• Á • •š]oo }µ

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/E/d/ KE Wdh /d DK

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d D D
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ïXïXW}š vš] o À o}‰u vš o u vš• ((š

À o}‰u vš o u vš• ‰}š vš] ooÇ ((š Ç P }š Zv] o Z Ì Œ • Œ

- x µ]o]vP• t (}µv š]}v•X
- x µ]o]vP• t (o}}Œ ^o •
- x Z} • v ‰ À u vš•X
- x ^ ŒÀ] •X
- x Z š]v]vP Á oo•X
- x }v•šŒµ š]}v •š ((U À Z] o • v ‰o vš }‰ Œ š}Œ•X
- x }v Œ š o}Á PŒ}µv X

, ošZ v • (šÇ Œ]•l• š} •]š }všŒ š}Œ• v u]vš v v Á}Œl Œ• Z šZ • Á}Œl• v Á]oo v š} }v•] Œ • ‰ Œ š oÇ µŒ]vP •]PvX

dZ }À ‰o µ•] o P }š Zv] o Z Ì Œ • v À o}‰u vš o u vš• (((}ŒÁ Œ (}Œ]vÀ •š]P š]}v v •• ••u všX

ïXð ' }r vÀ]Œ}vu vš o Æ‰}•µŒ u} o

ïXðXí}vš Æš

dZ ‰Œ o]u]v ŒÇ Æ‰}•µŒ u} o]• µ• š}] vš](Ç P }r vÀ]Œ}vu vš ‰}š vš] o }vš u]v vš o]vl P •U • }v šZ •}µŒ r‰ šZÁ ÇrŒ ‰š}(

À] o }vš u]v vš o]vl P Œ ‹µ]Œ • oo šZ }u‰}v vš• }(v ^WZ š} Œ ‰Œ • všU šZ Œ]• v} o]vl P v v} (µŒšZ Œ •• ••u vš]• Œ ‹µ](

ïXðXW}š vš] o }vš u]v vš•

&}Œ šZ ‰µŒ‰}• }(šZ]• •• ••u vš šZ ‰}š vš] o }vš u]v vš• Z À ÁZ šZ Œ šZ Ç Œ o]l oÇ š} Z À }Œ]P]v š (Œ}u v }vr•]š }Œ }((r•]

ïXðXíWK}íš vš] o }vr•]š •}µŒ • }(}vš u]v š]}v

- x D 'Œ}µv U ••}] š Á]šZ Z]•š}Œ] o }v•šŒµ š]}v š]À]š] • v] o À š }v všŒ š]}v• }(u š o•U u š oo}] •U • •š}• (] Œ •U • •š v ‰ šŒ}o µu ZÇ Œ} Œ }v• ~^ìí•X
- x W}š vš] o • •š}• }vš]v]vP D š Œ] o• Á]šZ]v Æ]•š]vP µ]o]vP ~^
- x 'Œ}µv P • • ~ Œ }v]}Æ] v u šZ v • (Œ}u }ŒP v] u š Œ] o•]v ‰}•]š• ~^ìï•X

ïXðXíWK}íš vš] o }((r•]š •}µŒ • }(}vš u]v š]}v

- x 'Œ}µv P • • ~ Œ }v]}Æ] v u šZ v • (Œ}u D 'Œ}µv (Œ}u Z]• u vµ(š}ŒÇ o} š õìu •š }(•]š u}vP•š }šZ Œ v Œ Ç Z]•š}Œ] µ• • ~^ìð•X
- x ,Ç Œ} Œ }v (µ o•U oµ Œ] vš•U v •}oÀ vš• (Œ}u P v Œ o •‰]oo]•‰}• o v •‰]oo P (Œ}u Á •š Œ ‰š o • v Z]•š}Œ] o P Œ P

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ïXðXW}š vš] o Œ ‰š}Œ•

dZ (}oo}Á]vP ‰}š vš] o Œ ‰š}Œ•]v Œ o š]}v š} šZ ‰Œ}‰}• o v

- x W }‰o ~v]PZ }µŒ•U •]š v µ• Œ•• ~Zìí•X
- x À o}‰u vš v µ• ~ µ]o]vP•U µš]o]š] •• ~Zìî•X
- x 'Œ}µv Á š ŒW ^ }v ŒÇ ‹µ](Œ •š šµ• }(šZ d ‰o}Á 'Œ À o D u ^ (}Œ Z ol ‹µ](Œ ~Zìï•X

ïXðXW}š vš] o ‰ šZÁ Ç•

dZ (}oo}Á]vP ‰}š vš] o ‰ šZÁ Ç• Z À v] vš](] X

- x /vP •š]}vU •l]v }vš šU]vZ o š]}v }(µ•š v }µš }}Œ]Œ Ç ‰ }‰
- x]Œ š }vš š Á]šZ •µ •š v • o š Œ]}µ• š} µ]o]vP u š Œ] o• ~W
- x D šZ v]vPŒ •• À] ‰ Œu o •}]o• v l}Œ }v•šŒµ š]}v P ‰• ~Wì
- x sK v ‰ šŒ}o µu ZÇ Œ} Œ }v À ‰}µŒ]vPŒ •• À] ‰ Œu o •}] ~Wìð•X
- x D]PŒ š]}v }(}vš u]v vš À] o Z š u]PŒ š]}v šZŒ}µPZ šZ µv• š 'Œ À o D u Œ ~Wìñ•X
- x D]PŒ š]}v }(}vš u]v vš (Œ}u šZ PŒ}µv Á š Œ Á]šZ]v šZ d ‰o}Á PŒ}µv Á š Œ Á]šZ]v šZ ^ (}Œ Z ol ‹µ](Œ ~Wìò•X
- x ^µŒ(Á š ŒU À] Œ]v P]• Z ŒP ~Wìó•X
- x ^µŒ(Á š Œ À] • (o}Á (Œ}u PŒ}µv Á š Œ ~Wìô•X

,ošZ v • (šÇ Œ]•l• š} •]š À o}‰u vš }všŒ š}Œ• v u]vš v v •• •• • ‰ Œš }(šZ]• •šµ Ç v Á]oo v š} }v•] Œ • ‰ Œ š o

dZ }À •}µŒ •U ‰ šZÁ Ç• v Œ ‰š}Œ• Z À v }v•] Œ • ‰ •• ••u vš]v }Œ v Á]šZ > ZD ~îìîí•U Œ }v•] Œ š} ‰o µ•] v Z À v ŒŒ] (}ŒÁ Œ (}Œ]vÀ •š]P š]}v v •• ••u všX v •• W šZÁ Ç t Z ‰š}Œ o]vl P •]• µv Œš l v v]• ‰Œ • vš]v ‰‰ v

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ðX ^< ^dh z KE >h^/KE^

ðXí ' }š Zv] o }v oµ•]}v•

• šZ À o}‰u vš ‰Œ}‰}• o]v oµ • Œ (µŒ]•Zu vš }voÇ š} šZ Æ
•šŒµ šµŒ o o} • }Œ Œ l]vP }(PŒ}µv U šZ Œ Œ v} •]š r•‰](]
•µŒÀ Ç Ç •µ]š oÇ ‹µ o](] •šŒµ šµŒ o vP]v Œ]• Œ }uu v X

ðXî ' }r vÀ]Œ}vu vš o }v oµ•]}v•

• }v Z]•š}Œ] o v µŒŒ vš o v µ• •W

x /š]• }v•] Œ šZ š]š]• µvo]l oÇ šZ š šZ •]š Á}µo o ••](]
î }(šZ W íõõìX

x tZ]o]vPŒ •• }(PŒ}µv P • v l}Œ À ‰}µŒ•]• šÇ‰] ooÇ šZ Z]P
•µ Z • šZ]•U]š]• v}š šZ š v} •]Pv](] vš •}µŒ }(PŒ}µv P • }(
o}Á }Œ]v o}• ‰Œ}Æ]u]šÇ š} šZ •]š X &}Œ }v• ŒÀ š]•uU]š Á}
P •lÀ ‰}µŒ •µŒÀ Ç]v šZ • u všlPŒ}µv (o}}Œ }(šZ µ]o]vP š
v} Œ]•l]• ‰Œ • všX

x dZ }À Œ oo Œ]•l (Œ}u o v }vš u]v š]}v š šZ •]š]• }v•] Œ š
À o}‰u všU •]š]• }À Œ ‰Œ }u]v všoÇ Ç Z Œ •š v]vPl µ]o
‰}••]]o]šÇ }(}vš š Á]šZ šZ •}]o•U • Á oo • šZ Œ]•l }(vÇ •]
š} o Z]vPX

x Z]•l• š} }v•šŒµ š]}v Á}Œl Œ• v v µ• Œ• (Œ}u • •š}• ‰}š vš] o
µ]o]vP v }ÁvPŒ š} o}Á Œ]•l ‰Œ}À] oo Á}Œl Á]šZ • •
šZ }všŒ}o }(• •š}• Z Pµo š]}v• ~ Z îìííî•X Z u}À o µv Œ }všŒ
Œ o • }((] Œ • š} šZ]Œ v šZ PŒ}µv X

x dZ }À Œ oo Œ]•l (}Œ Œ (µŒ]•Z •]š]• •• •• š} o}ÁU • o}
u š Œ] o• Á]šZ]v šZ µ]o]vP (Œ] Œ u v P]v }Œ v Á]šZ

dZ ‰}••] o ‰}ooµš vš o]vl P • ~(}Œ Œ]•l o À o• }(u} Œ š }Œ PŒ
•]š U • š Œu]v Ç šZ •l •šµ Ç v Á olr}À ŒU Œ •µuu Œ]•]v

d o ðXíW W}••] o W}ooµš vš >]vl P • ~(}Œ Z]•l > À o• }(D} Œ š }Œ 'Œ š Œ•

^}µŒ ~••	{ ‰}š vš] o /µ‰	Z ‰š}Œ~••
W}š vš] o • •š}• Á]šZ]v Æ]•š]vP µ]o]vP ~^ìî•X		^]š h• Œ•

dZ • ‰}••] o ‰}ooµš vš o]vl P • Œ ‹µ]Œ (µŒšZ Œ]vÀ •š]P š]}v v

ñX hE Zd /Ed/ ^ E >/D/d d/KE^

ñXí ' v Œ o }uu vš•

,Ç Œ} l }v•µoš vš• >]u]š ~,Ç Œ} l• Z • ‰Œ ‰ Œ šZ]• Œ ‰}Œš]v
,] l] v ,] l] >]u]š l} s]o t]oo] u• >>W ~šZ(µP µšš Uìîî Ç µvu Œo
šZ š Œu• }(‰‰}]všu vš (}Œ ,Ç Œ} lU (}Œ šZ •}o v •‰](] µ•
}uu]••]}v Ç šZ u š} µv Œš l Á}Œl ÁZ Œ Œ o] v]• ‰o }v šZ
ÁZ} µ• šZ]v(}Œu š]}v }vš]v Z Œ]v } •} š šZ]Œ }Áv Œ]•lX ,Ç
vÇ µ• }(šZ Œ ‰}Œš }Œ]š• }vš vš• (}Œ vÇ ‰µŒ‰}• }šZ Œ šZ v
µ• }(šZ Œ ‰}Œš Ç vÇ ‰ Œš] • v}š (]v]v ,Ç Œ} l[• ‰‰}]všu

dZ]• Œ ‰}Œš š]o• šZ (]v]vP• }(Á}Œl ŒŒ] }µš]v µPµ•š îìîîX
,Ç Œ} l }v šZ •]• }(À]o o]v(}Œu š]}v } š]v µŒ]vP šZ •šµ Ç
Œ •}v o ((}Œš Z • v u š} P šZ Œ oo Œ o À vš]v(}Œu š]}vU v
}v•šŒ]vš• }Œ o]]o]š] • ••}] š Á]šZ šZ •]š u Ç Z À v Œ À

hvo •• }šZ ŒÁ]• •š š U šZ Œ }uu v š]}v•]v šZ]• Œ ‰}Œš ••µu š
Æ]•š]vPX /(šZ Œ]• š} vÇ Œ r‰Œ}(]o]vP ~ XPX š} Œ š À o}
šZ v šZ Œ }uu v š]}v• u Ç v}š ‰‰oÇX

/v(}Œu š]}v ‰Œ}À] Ç šZ]Œ ‰ Œš] • Z • v µ•]v P}} ( ]šZ v
,Ç Œ} l vv}š Pµ Œ vš]š• µŒ Ç }Œ }u‰o š v ••X

tZ Œ Æ]•š]vP]v(}Œu š]}v ‰Œ ‰ Œ Ç }šZ Œ• Z À v ‰Œ}À]
šZ • Z À v]šZ Œ }uu]••]}v Ç šZ o] všU }Œ v ••]Pv š}
µ‰}v Ç ,Ç Œ} lX ^Z}µo šZ]• v}š šZ • ,Ç Œ} l •Z}µo]v(}Œu
Á}Œl u Ç Œ ‹µ]Œ X ,Ç Œ} l]• v}š Œ •‰}v•] o (}Œ vÇ (šµ o C
š U }Œ (}Œ šZ }‰]v]}v• v Œ }uu v š]}v• }(}šZ Œ•X /š]• ‰}••]
u Ç Z À •]v Z vP šZŒ}µPZ v šµŒ o ‰Œ} •• • }Œ o š Œ š]À]š]

dZ Á}Œl Z • v ŒŒ] }µš]v P v Œ o }Œ v Á]šZ Œ }Pv]•
•š š U v} •• ••u vš Z • v u (}Œ šZ ‰Œ • v }(Œ]} š]À •µ •
}Œ v v X tZ Œ šZ ‰ZŒ • Z•µ]š o (}Œ µ• [ ]• µ•]v šZ]• Œ ‰}Œ
µ•]v ‰o vv]vP }všŒ}o v } • v}š]u‰oÇ vÇ •‰](] Á ŒŒ všÇ }

tZ]o•š šZ ‰Œ o]u]v ŒÇ Œ]•l •• ••u vš ‰Œ} •• Z •] vš](] ‰}š vš
}v•] Œ š]}v }(} µ‰ š]}v o Z ošZ v • (šÇ]••µ •]• Ç}v šZ • }%

dZ v}vr•‰] o]•š hyK • Œ v]vP Z • v µv Œš l v (}Œ šZ ‰µŒ‰}
~]X X o}Á Œ]•l š]À]šÇ]v }Œ v Á]šZ /Z/ Z ‰}Œš òôí•X &µŒš
Á]šZ Œ P Œ • š} }šZ Œ Z]PZ Œ Œ]•l š]À]š] • XPX }v•šŒµ š]}vX

Wo • v}š šZ š v}šÁ]šZ•š v]vP vÇ •]š } • ŒÀ š]}v• }v Œv]vP šZ
Œ Z }o}P] o •]š •U • •š}•r }vš]v]vP u š Œ] o• }Œ]vÀ •]À Á •U
(}Œu o •µŒÀ Ç }(šZ • ‰}š vš] o }v•šŒ]vš• v •‰] o]•š À] •Z

vÇ •]š }µv ŒÇ o]v ‰] š }v ‰o v• } • v}š]u‰oÇ o P o }Áv Œ•

òX Z KDD E d/KE^ &KZ &hZd, Z tKZ<

&}oo}Á]vP šZ]vÀ •š]P š]}v µv Œš l v š} š U šZ (}oo}Á]vP (µŒšZ

- Œ (µŒ]•Zu vš •µŒÀ Ç š} µv Œš l v š} }v(]Œu šZ š šZ Œ (µ ‰o ‰Œ]}Œ š} šZ ‰Œ}‰}• Á}Œl•]v }Œ v Á]šZ šZ }všŒ} îìííî•V v
-]• µ••]}v• Á]šZ Œ Pµo š}ŒÇ }] • v šZ Á ŒŒ všÇ ‰Œ}À] Œ Œ Œ ‰}ŒšX

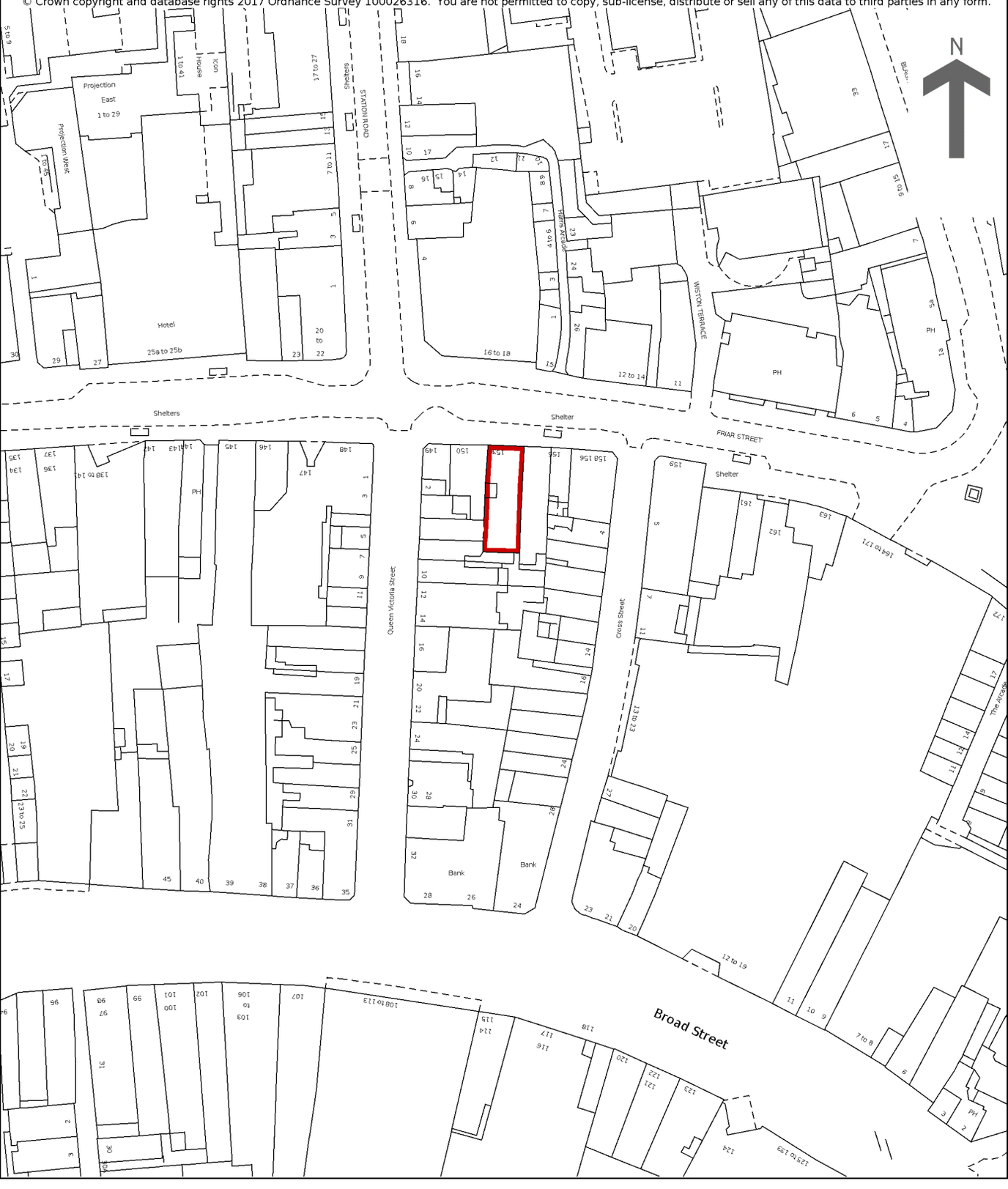
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‰ ‰ v]ÆŒ Á]vP•

HM Land Registry
Current title plan

Title number **BK488159**
Ordnance Survey map reference **SU7173NE**
Scale **1:1250**
Administrative area **Reading**

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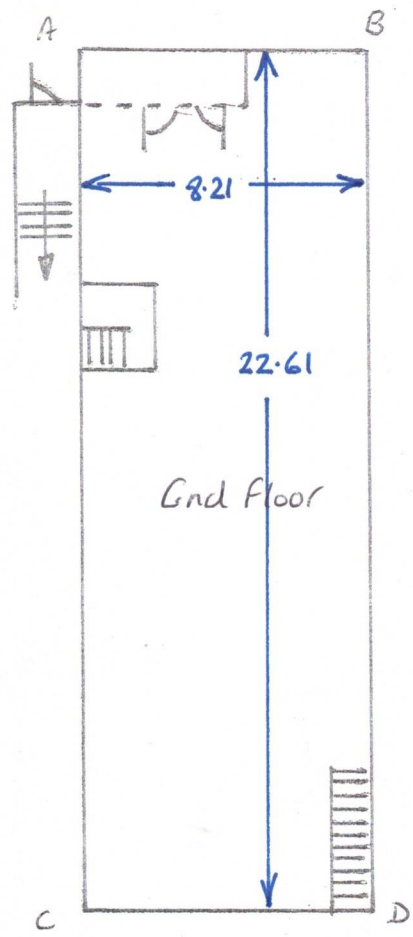
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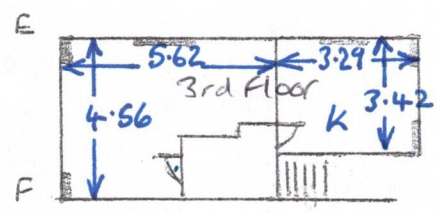
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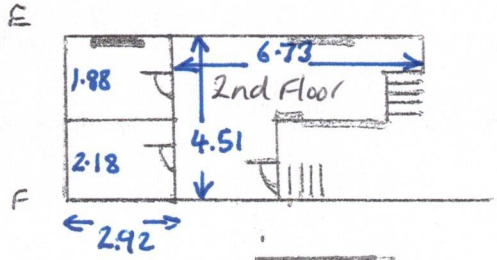
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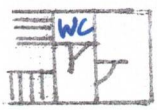
FRIAR STREET

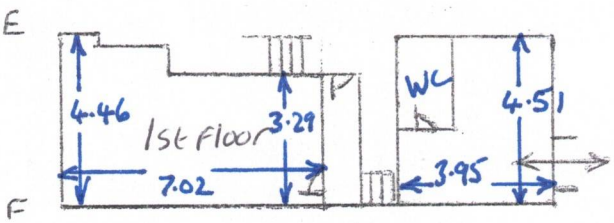
QUEEN VICTORIA STREET.

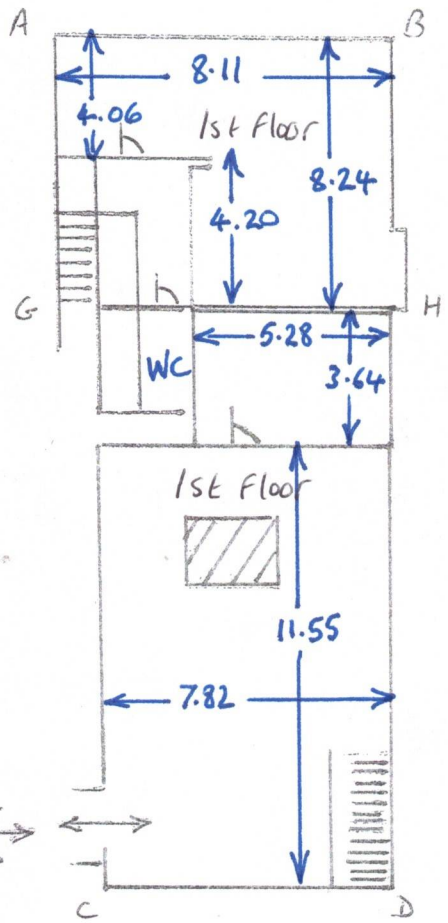


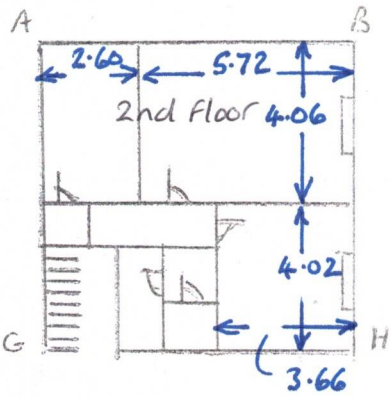








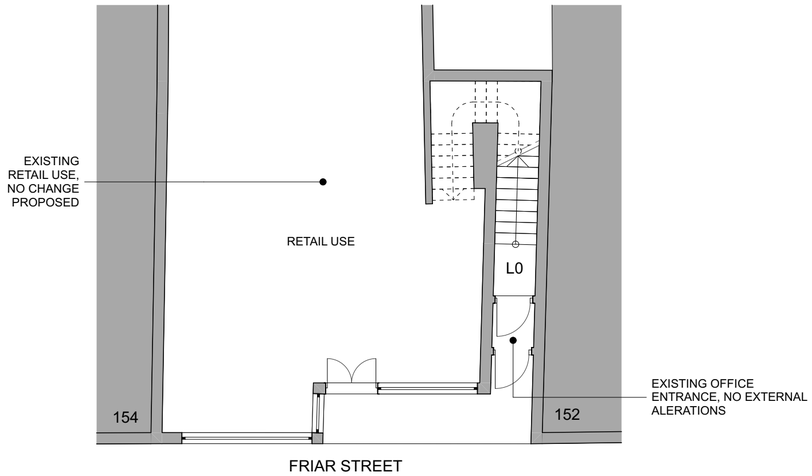




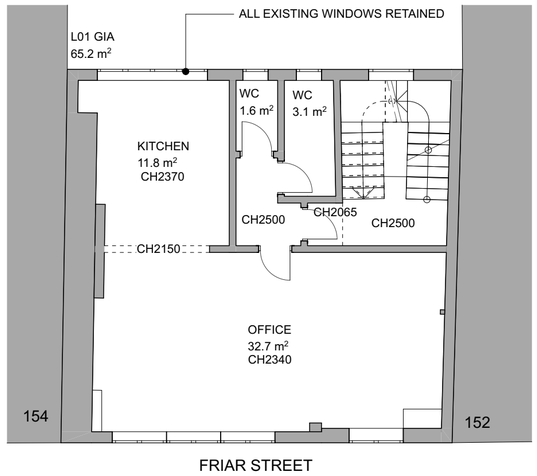
Basement not shown

Approx scale 1:200

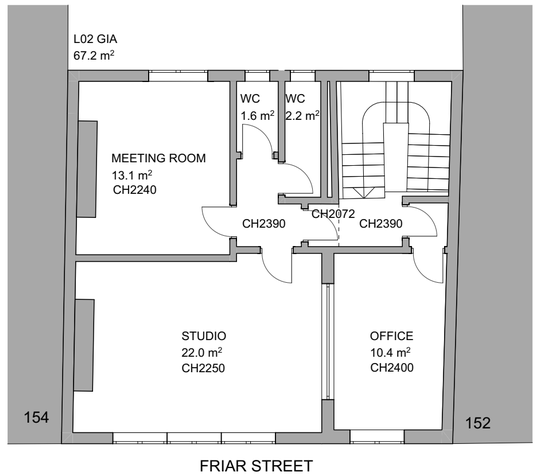
DM 10.11.21.



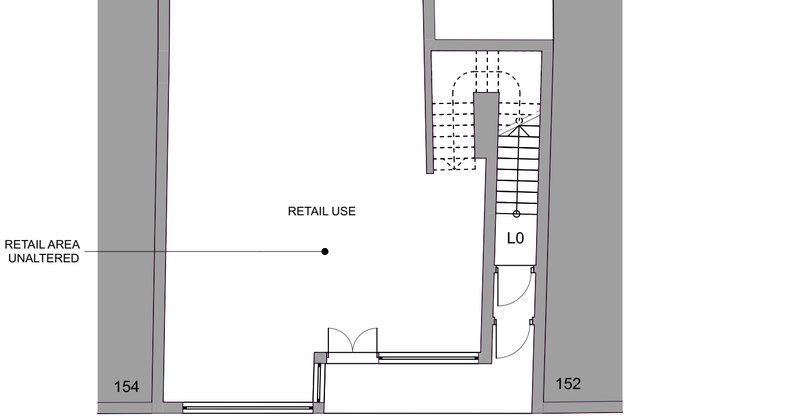
0. EXISTING GROUND FLOOR 1:100



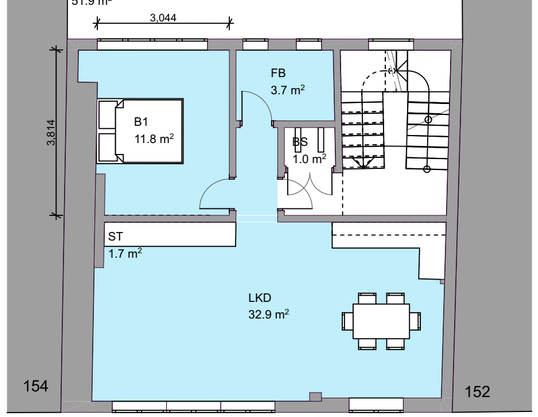
1. EXISTING FIRST FLOOR 1:100



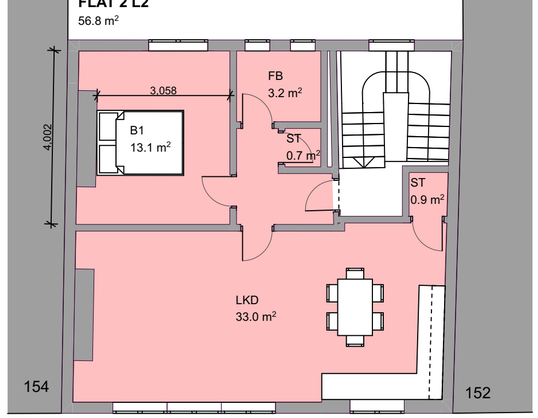
2. EXISITING SECOND FLOOR 1:100



0. PROPOSED GROUND FLOOR



1. PROPOSED FIRST FLOOR



2. PROPOSED SECOND FLOOR

0 1 2 3 4 5m

SCALE

N

WORK IN PROGRESS
16/08/2022

NOTES ORIGINAL A2

NOT FOR CONSTRUCTION

THIS DRAWING IS FOR PLANNING ONLY.

SUBJECT TO DETAILED DESIGN, DESIGN COORDINATION WITH OTHERS AND PLANNING AND BUILDING CONTROL APPROVAL. SURVEY BY SURVEY AND ENGINEERING SERVICES LTD.

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Rev

National Space Standards Area Check (Areas in m²)			
Flat 1 - 1B 2P	**Requirement**	**Proposal**	
Gross Internal Area	50	53.8	✓
Double Bedroom Area	11.5	11.8	✓
Double Bedroom Width	2.75m	3.0m	✓
Storage	1.5	1.7	✓
Ceiling Height	2.3m	2.35m	✓
National Space Standards Area Check (Areas in m²)			
Flat 2 - 1B 2P	**Requirement**	**Proposal**	
Gross Internal Area	50	56.9	✓
Double Bedroom Area	11.5	13.1	✓
Double Bedroom Width	2.75m	3.0m	✓
Storage	1.5	1.6	✓
Ceiling Height	2.3m	2.35m	✓

ROOMS

B1	BED 1
FB	FAMILY BATH
LKD	LIVING/KITCHEN/DINING
ST	STORE

OTHER AREAS

BS	BICYCLE STORE
B	BINS
L-1	BASEMENT
L0	LEVEL 0
L1	LEVEL 1
GPA	GARDEN PRIVATE AMENITY
BPA	BALCONY PRIVATE AMENITY
OB	OBSCURED GLAZING

Client
Hickies Ltd

Drawing Title
EXISTING AND PROPOSED PLANS

HIVES ARCHITECTS
SINCE 1934
Hives Architects LLP
29 Castle Street, Reading, RG1 7SB
0118 958 7331, admin@hivesarchitects.co.uk

Site
153 Friar Street, Reading, RG1 1HE

Scale
1:100, 1:200, 1:1 @A2

Project Status
PLANNING

Drawn Checked
SB HW

Project Drawing Revision
2846 002P1

Hydrock

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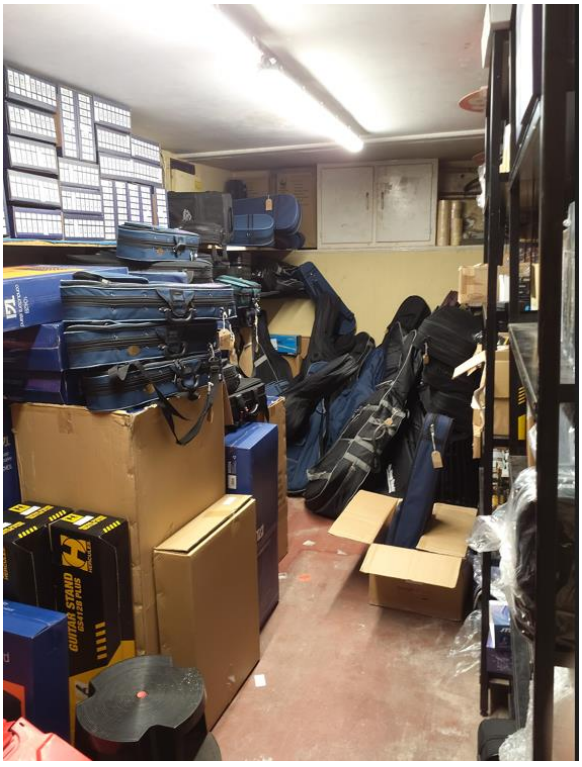
Desk Study Photograph 1	
Date: 25/08/22	
Direction Photograph Taken: South Facing.	
Description: Site storefront and Friar Street.	

Desk Study Photograph 2	
Date: 25/08/22	
Direction Photograph Taken: Looking southeast from central south section of the site.	
Description: Site storefront and Friar Street.	

Desk Study Photograph 3	
Date: 25/08/22	
Direction Photograph Taken: West Facing	
Description: Friar Street, outside site entrance. Service covers present.	

Desk Study Photograph 4	
Date: 25/08/22	
Direction Photograph Taken: South Facing	
Description: Friar Street, outside site entrance. Service covers present.	

Desk Study Photograph 5	
Date: 25/08/22	
Direction Photograph Taken: South Facing	
Description: Site First Floor, used as storage area.	

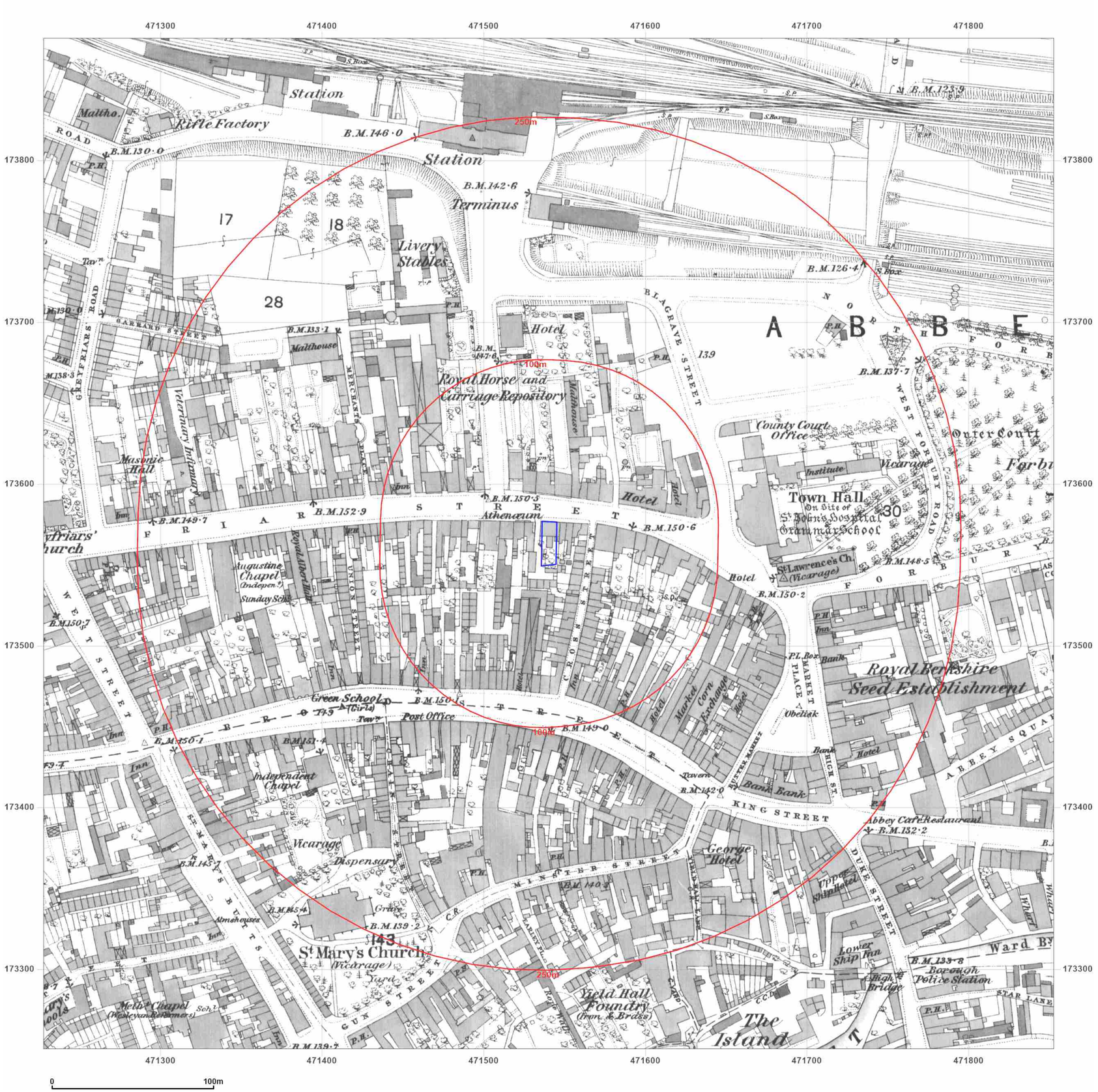
Desk Study Photograph 6	
Date: 25/08/22	
Direction Photograph Taken: South Facing	
Description: Site basement, used as storage area.	

Desk Study Photograph 7	
Date: 25/08/22	
Direction Photograph Taken: North Facing	
Description: Site second floor, used as teaching space.	

Desk Study Photograph 8	
Date: 25/08/22	
Direction Photograph Taken: South Facing.	
Description: View from second floor of site. Extraction fans present.	

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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

Map date: **1879**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1879
Revised 1879
Edition N/A
Copyright N/A
Levelled N/A

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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING,
RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series Town Plan

Map date: **1879**

Scale: 1:500

Printed at: 1:1,000

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Surveyed 1879
Revised N/A
Edition N/A
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Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

Map date: **1900**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1900
Revised 1900
Edition N/A
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Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

Map date: **1912**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1912
Revised 1912
Edition N/A
Copyright N/A
Levelled N/A

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Site Details:

153, FRIAR STREET, READING,
RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

Map date: **1931**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1931
Revised 1931
Edition N/A
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Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1956-1957**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1957 Revised 1957 Edition N/A Copyright N/A Levelled 1951	Surveyed 1956 Revised 1956 Edition N/A Copyright N/A Levelled 1951
Surveyed 1957 Revised 1957 Edition N/A Copyright N/A Levelled 1951	Surveyed 1956 Revised 1956 Edition N/A Copyright N/A Levelled 1951

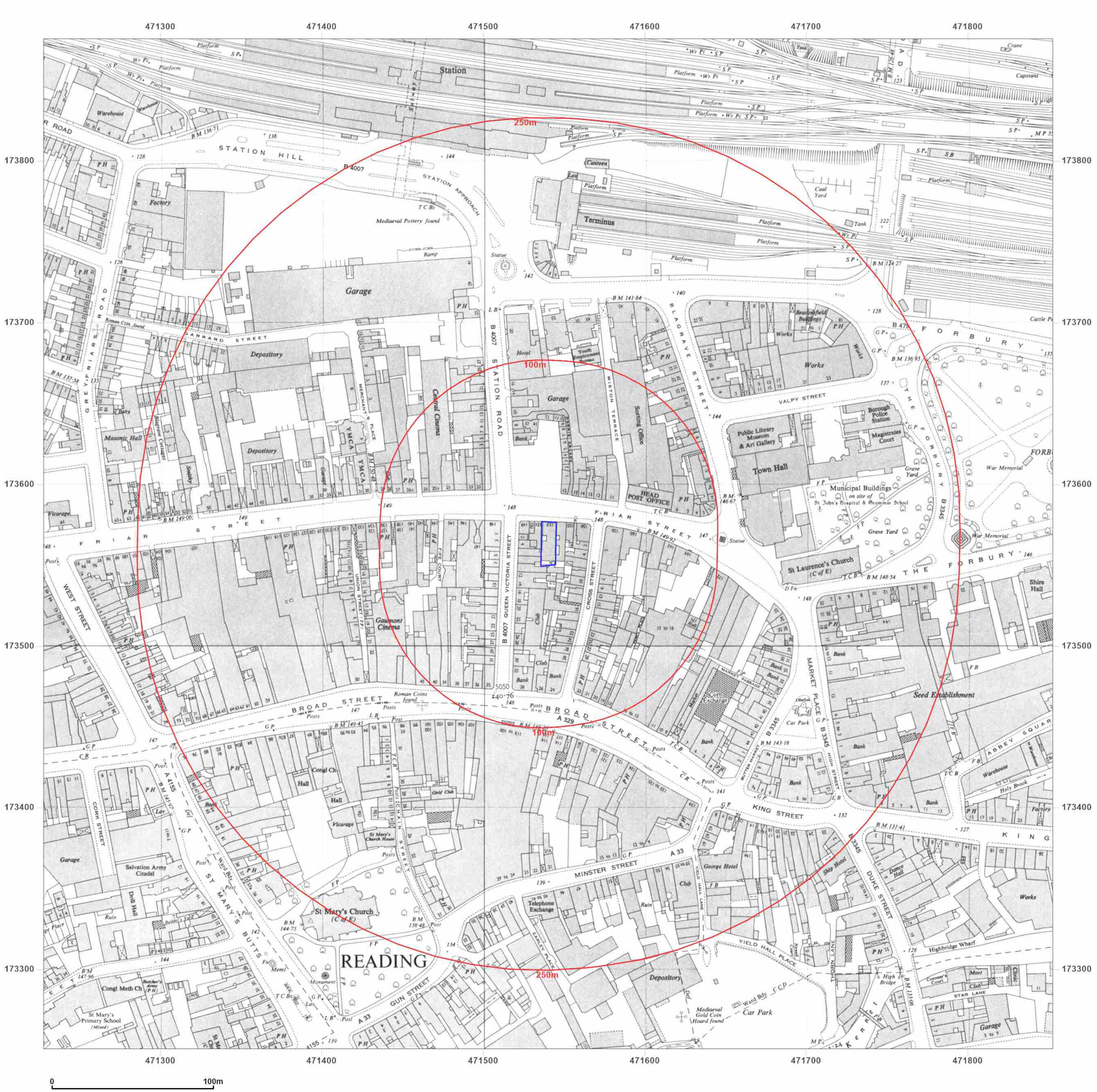
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Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1958**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1957
Revised 1957
Edition 1958
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Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1961**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1958
Revised 1958
Edition 1961
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Site Details:

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Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1957-1962**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1957 Revised 1962 Edition N/A Copyright 1962 Levelled 1951	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
Surveyed 1957 Revised 1962 Edition N/A Copyright 1962 Levelled 1951	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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Site Details:

153, FRIAR STREET, READING,
RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1962**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1956
Revised 1961
Edition N/A
Copyright 1962
Levelled 1951

Surveyed 1956
Revised 1961
Edition N/A
Copyright 1962
Levelled 1951

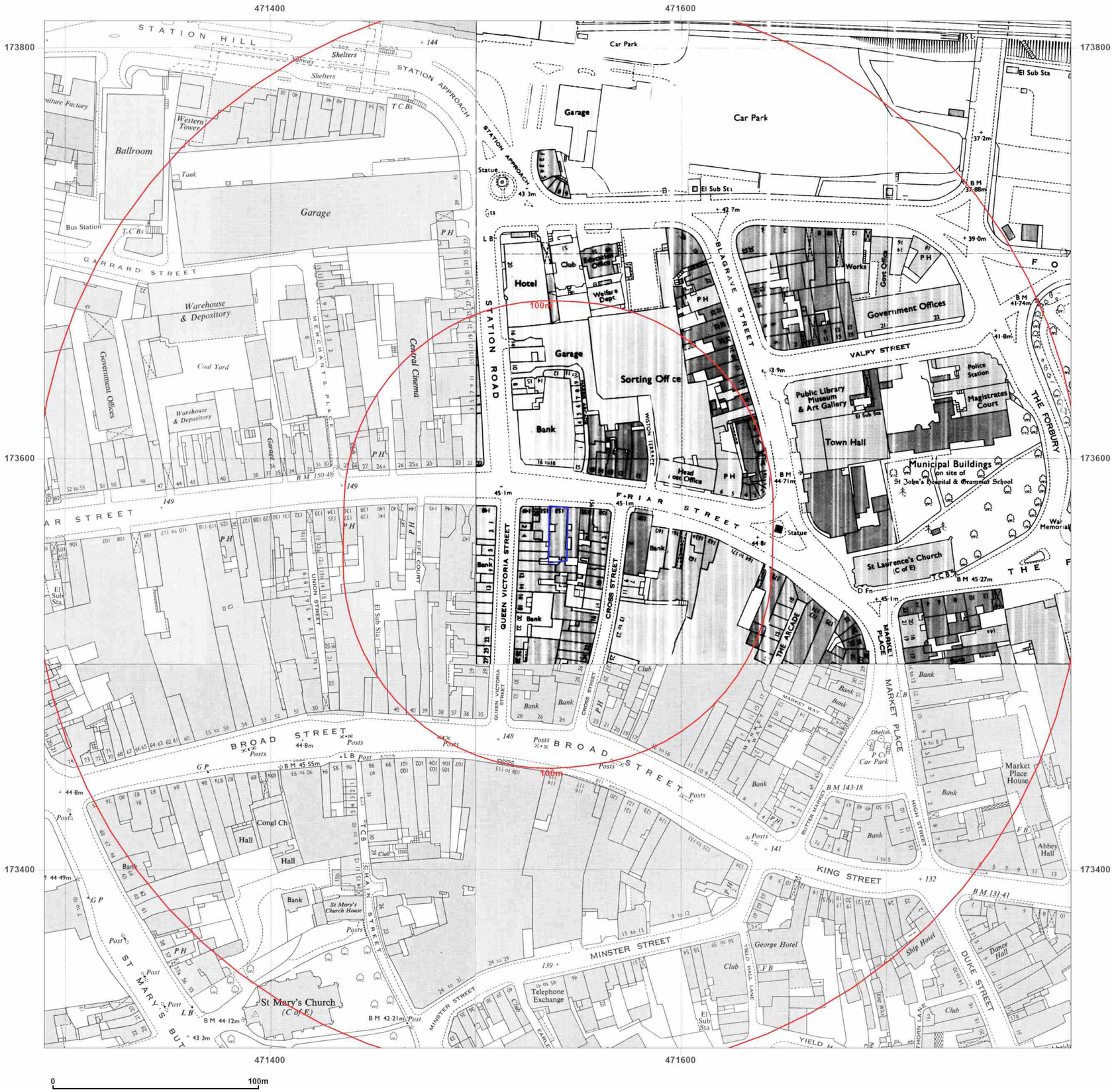
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Site Details:

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Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1968-1971**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1957
Revised 1958
Edition N/A
Copyright 1969
Levelled 1951

Surveyed 1956
Revised 1970
Edition N/A
Copyright 1971
Levelled N/A

Surveyed 1957
Revised 1969
Edition N/A
Copyright 1970
Levelled 1951

Surveyed 1956
Revised 1967
Edition N/A
Copyright 1968
Levelled 1951

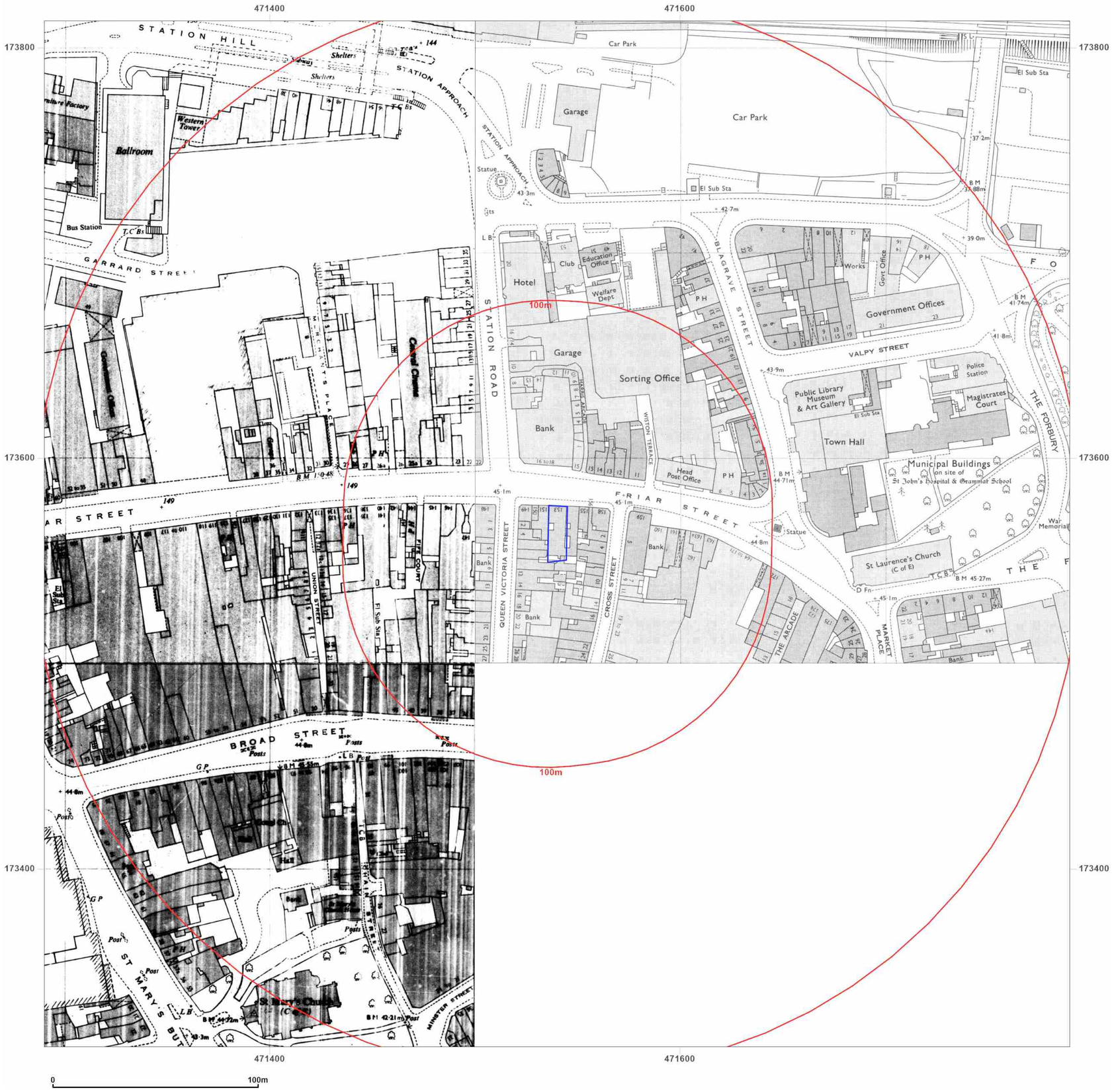
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Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1971-1974**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright 1974 Levelled N/A	Surveyed 1956 Revised 1970 Edition N/A Copyright 1971 Levelled 1951
Surveyed N/A Revised N/A Edition N/A Copyright 1973 Levelled N/A	

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Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1978-1979**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1979
Levelled 1972

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1979
Levelled 1973

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1978
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1979
Levelled 1973

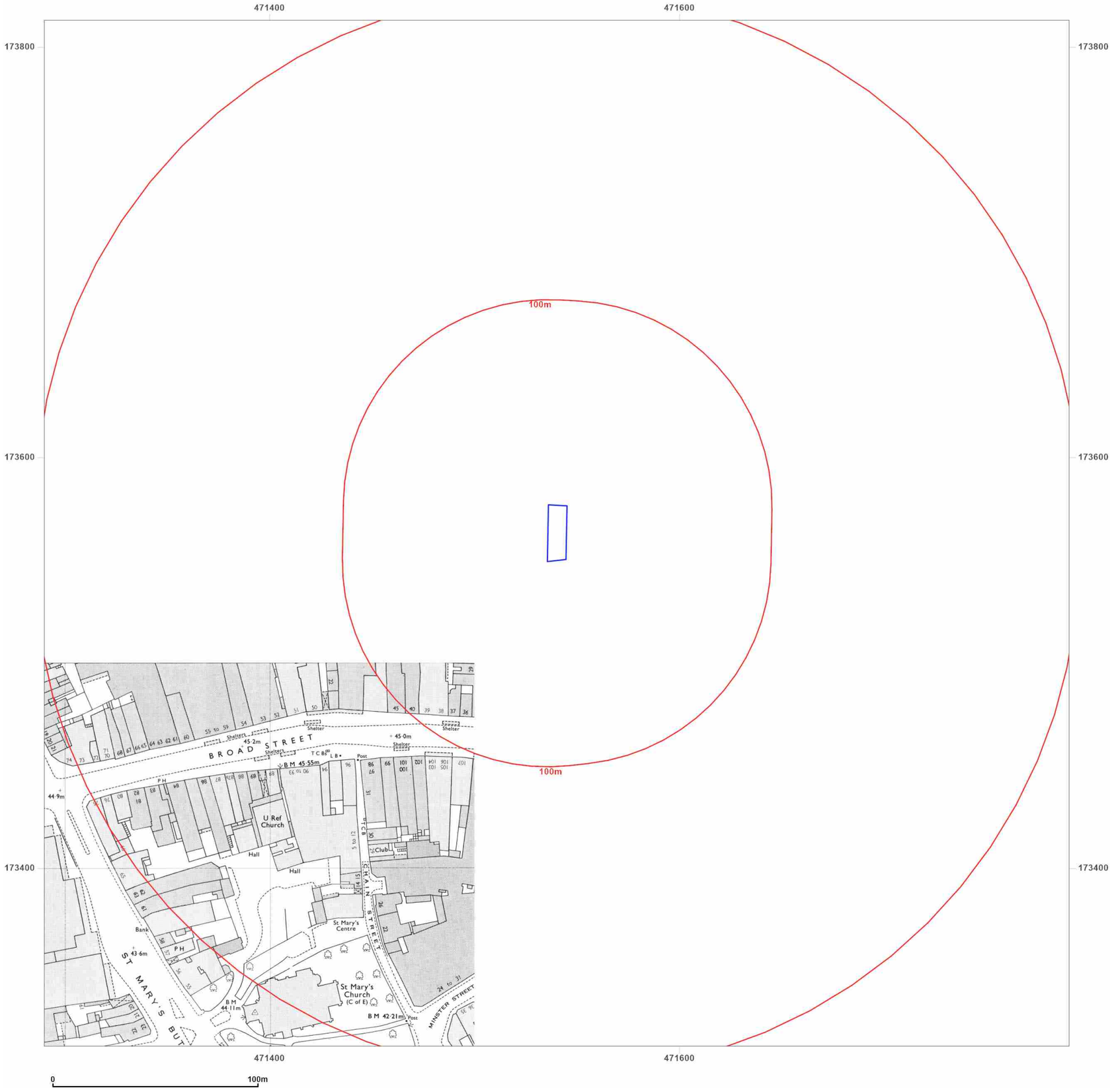
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Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

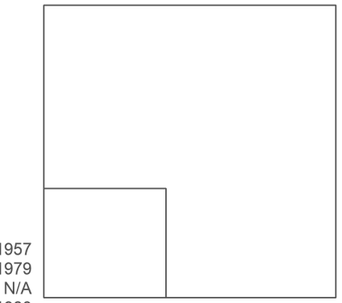
Map Name: National Grid

Map date: **1980**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1957
Revised 1979
Edition N/A
Copyright 1980
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Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1986-1988**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1957 Revised 1984 Edition N/A Copyright 1986 Levelled 1973	Surveyed 1956 Revised 1984 Edition N/A Copyright 1986 Levelled 1973
Surveyed 1973 Revised 1988 Edition N/A Copyright 1988 Levelled 1973	Surveyed 1958 Revised 1987 Edition N/A Copyright 1988 Levelled 1973

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Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1973 Revised 1988 Edition N/A Copyright 1988 Levelled 1973	Surveyed 1958 Revised 1984 Edition N/A Copyright 1988 Levelled 1973
Surveyed 1993 Revised N/A Edition N/A Copyright 1993 Levelled N/A	Surveyed 1973 Revised 1988 Edition N/A Copyright 1988 Levelled 1973

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Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Revised N/A
Edition N/A
Copyright 1993
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Surveyed 1973
Revised 1984
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Site Details:

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Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1991-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1993-1994**

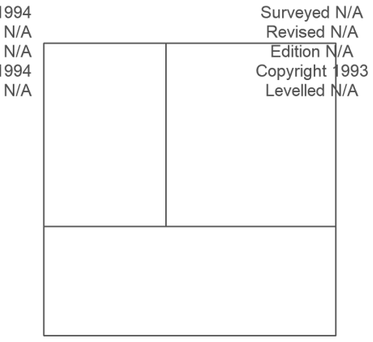
Scale: 1:1,250

Printed at: 1:2,000

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Edition N/A
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Surveyed N/A
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Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

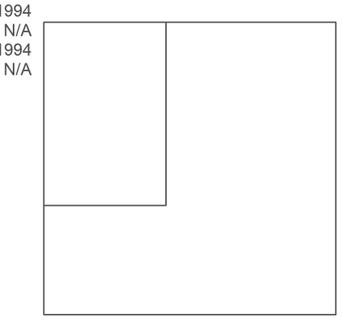
Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1994
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Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: LandLine
Map date: **2003**
Scale: 1:1,250
Printed at: 1:1,250

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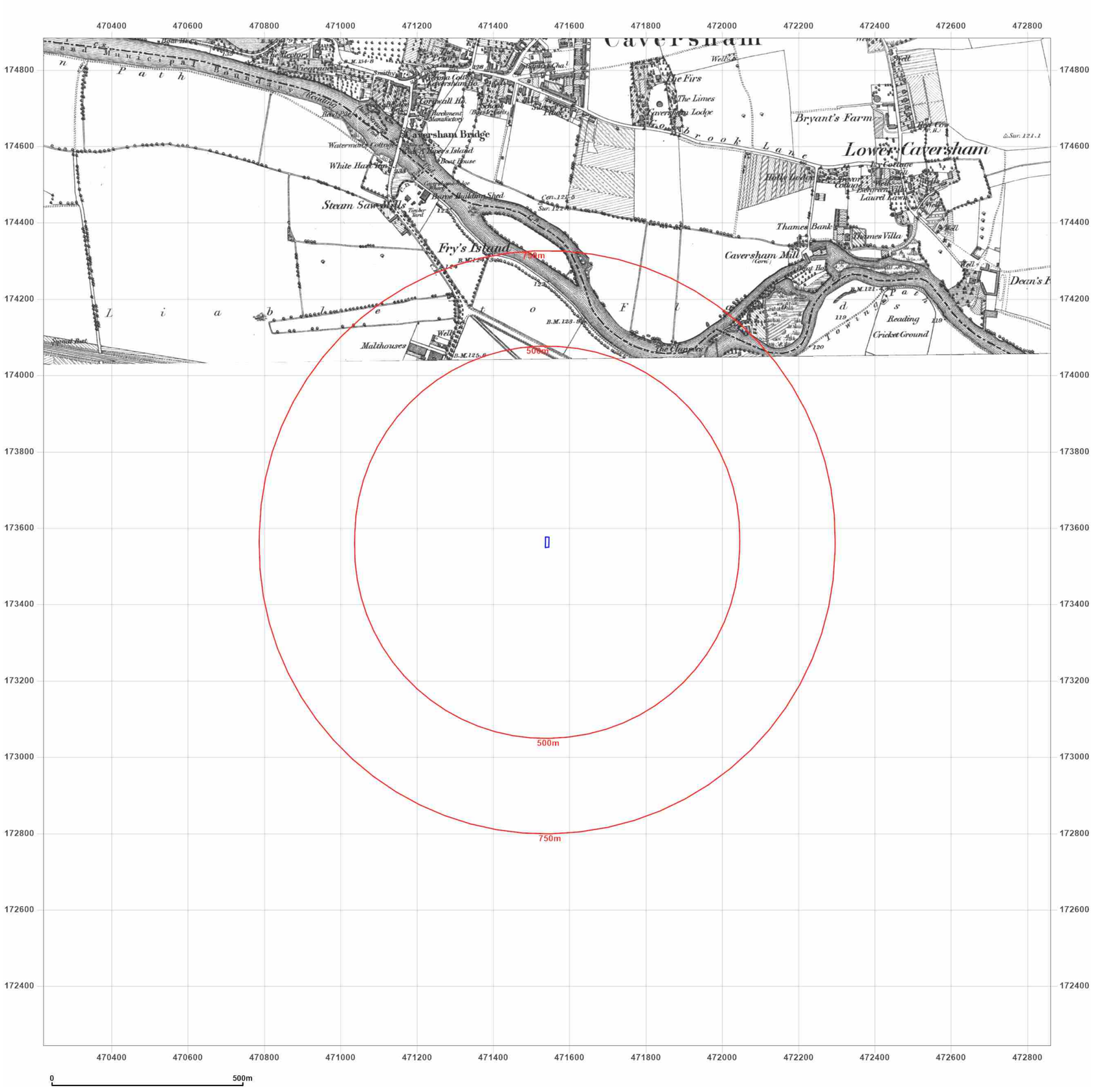
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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

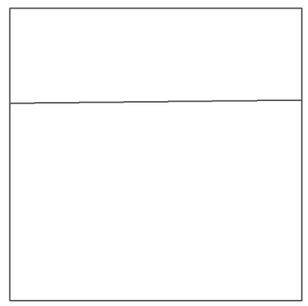
Map date: **1878**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1878
Revised 1878
Edition N/A
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Site Details:

153, FRIAR STREET, READING,
RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

Map date: **1897-1900**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1877
Revised 1897
Edition 1900
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1897
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1898
Edition 1900
Copyright N/A
Levelled N/A

Surveyed N/A
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

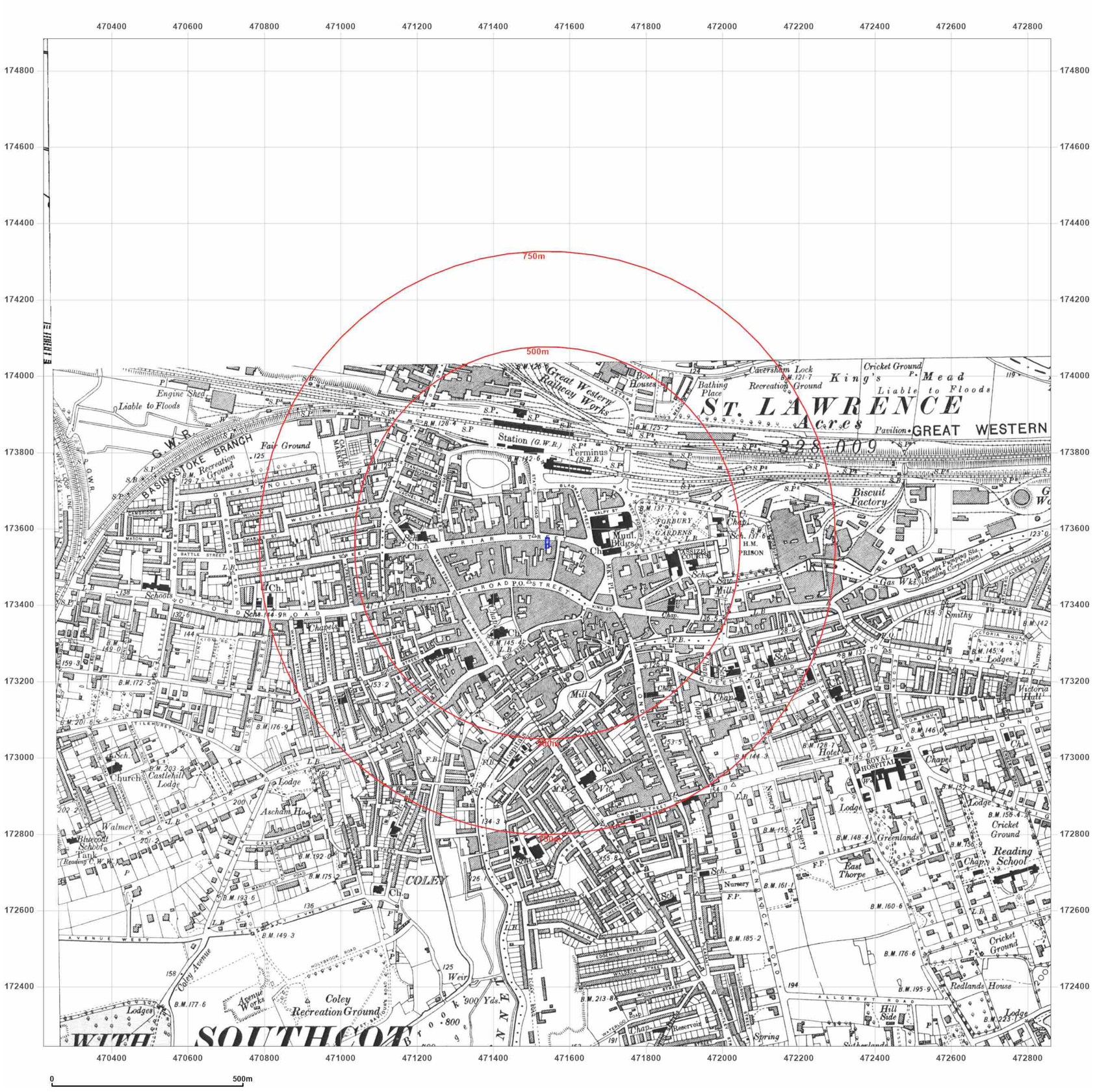
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Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

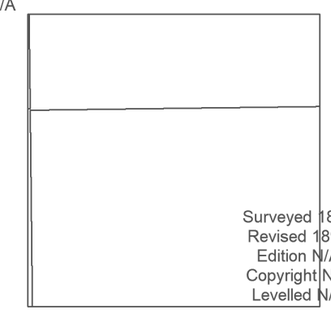
Map date: **1898-1900**

Scale: 1:10,560

Printed at: 1:10,560

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Revised N/A
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Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

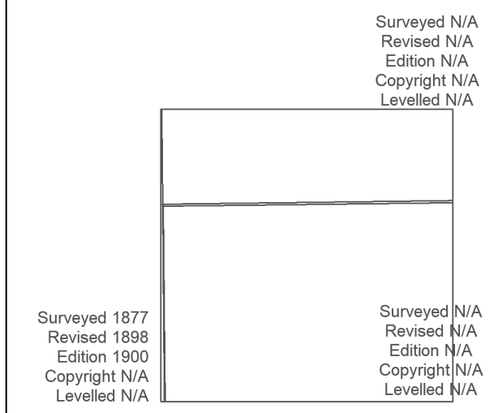
Map Name: County Series

Map date: **1900**

Scale: 1:10,560

Printed at: 1:10,560

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Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

Map date: **1910-1914**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1910
Edition N/A
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Surveyed N/A
Revised 1914
Edition 1913
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Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

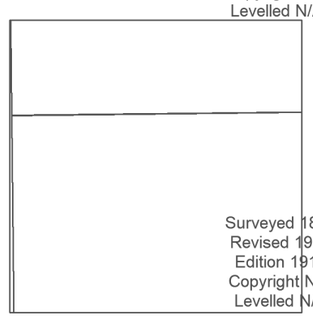
Map date: **1913-1914**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1877
Revised 1910
Edition 1914
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Revised 1910
Edition 1913
Copyright N/A
Levelled N/A

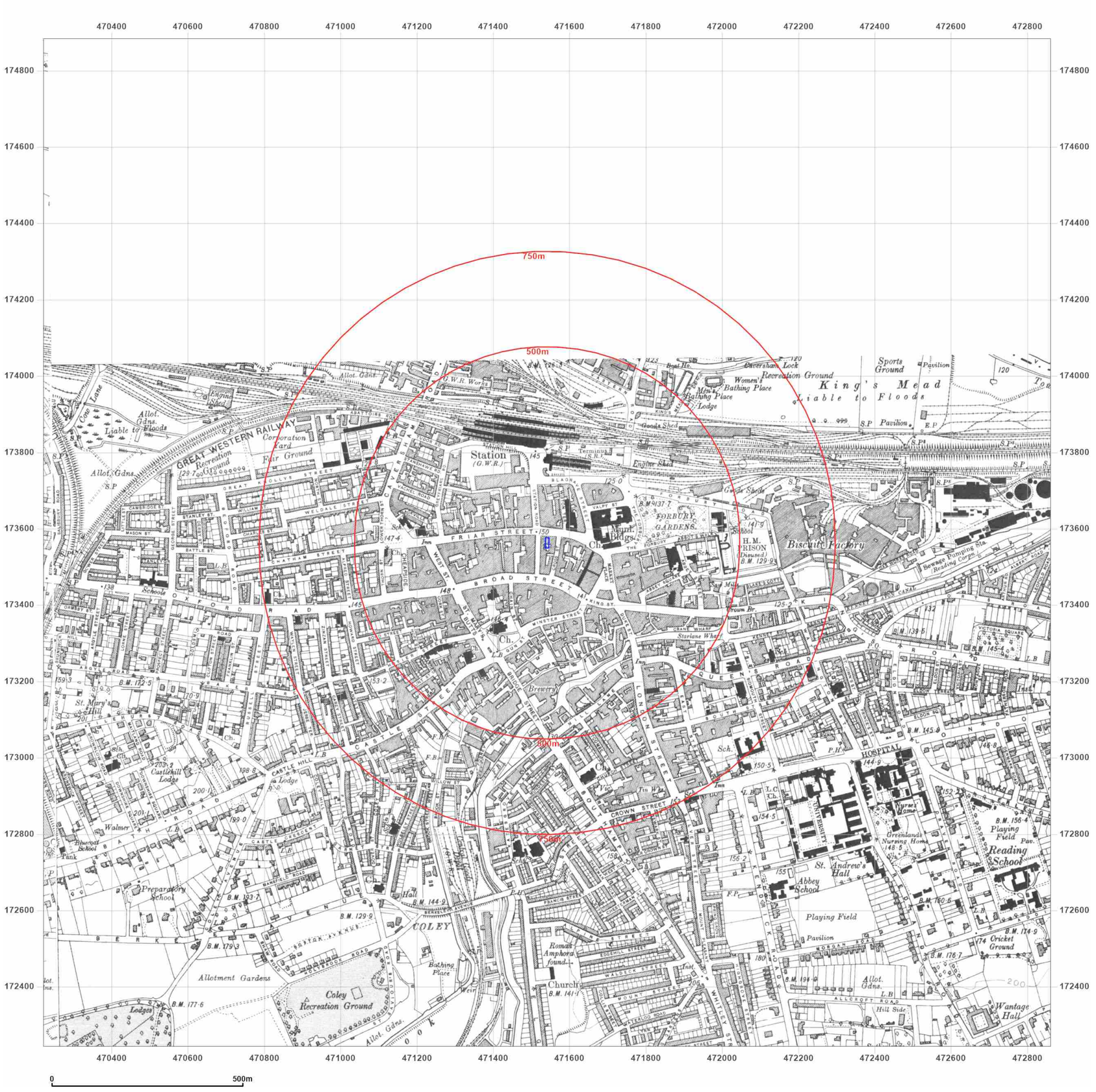
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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING,
RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

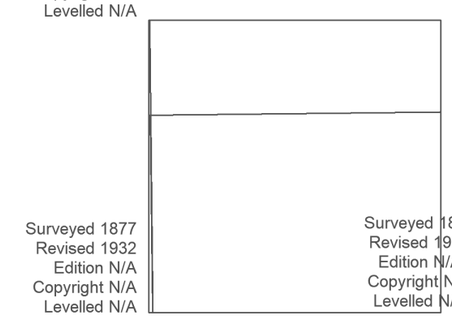
Map date: **1932-1933**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1877
Revised 1932
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1877
Revised 1932
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1933
Edition N/A
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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

Map date: **1938**

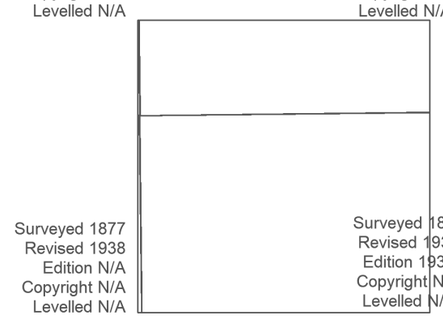
Scale: 1:10,560

Printed at: 1:10,560

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Surveyed N/A
Revised N/A
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1938
Edition N/A
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Edition 1938
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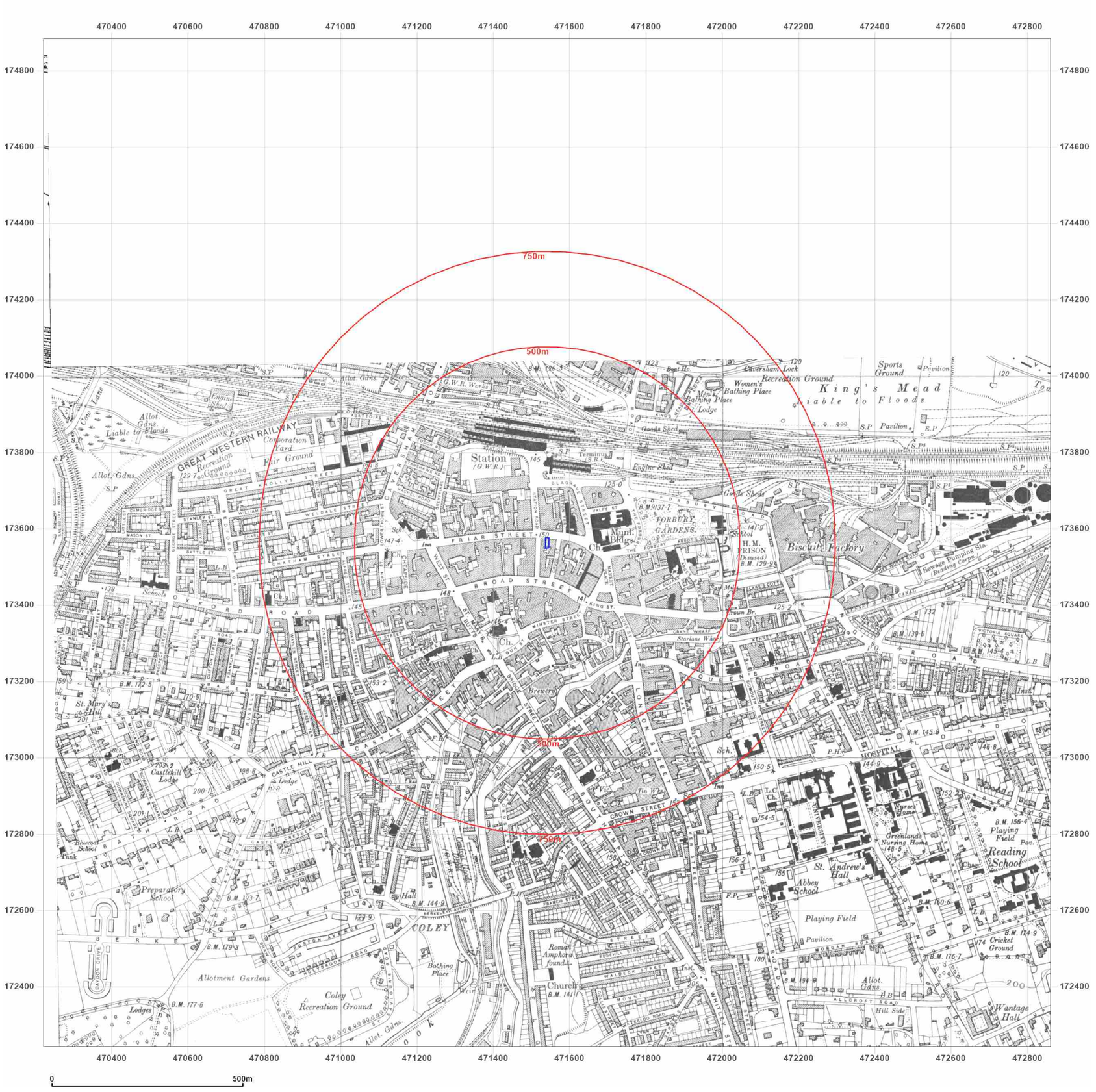
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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: County Series

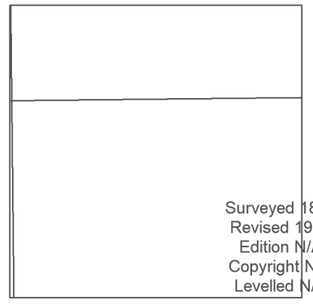
Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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Revised N/A
Edition 1938
Copyright N/A
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Revised 1938
Edition N/A
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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: Provisional

Map date: **1962**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1959
Revised 1961
Edition N/A
Copyright 1962
Levelled N/A

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Production date: 16 August 2022

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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1973**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1970
Revised 1973
Edition N/A
Copyright 1973
Levelled N/A

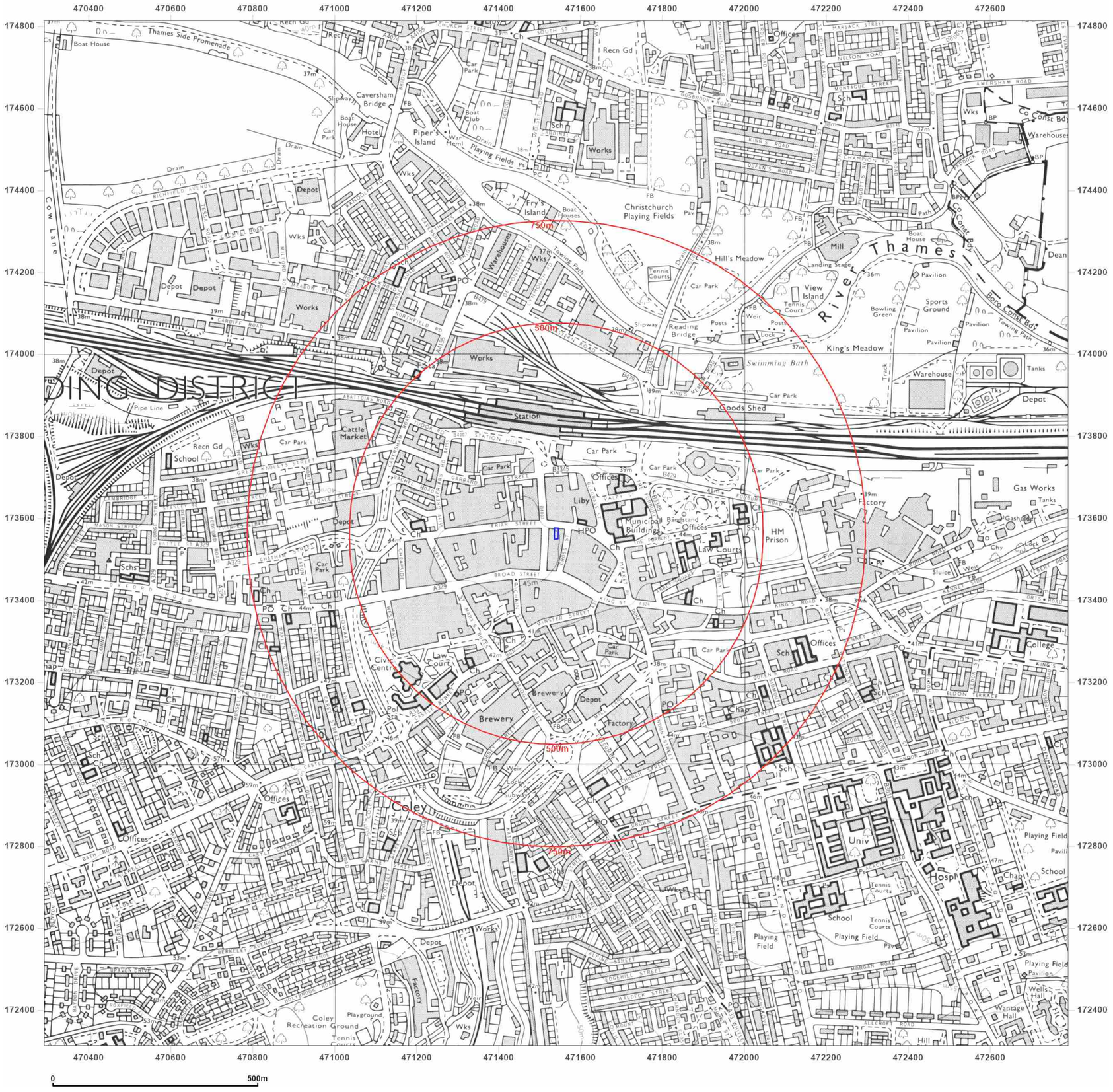
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Production date: 16 August 2022

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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1979**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1977
Revised 1979
Edition N/A
Copyright 1979
Levelled 1969

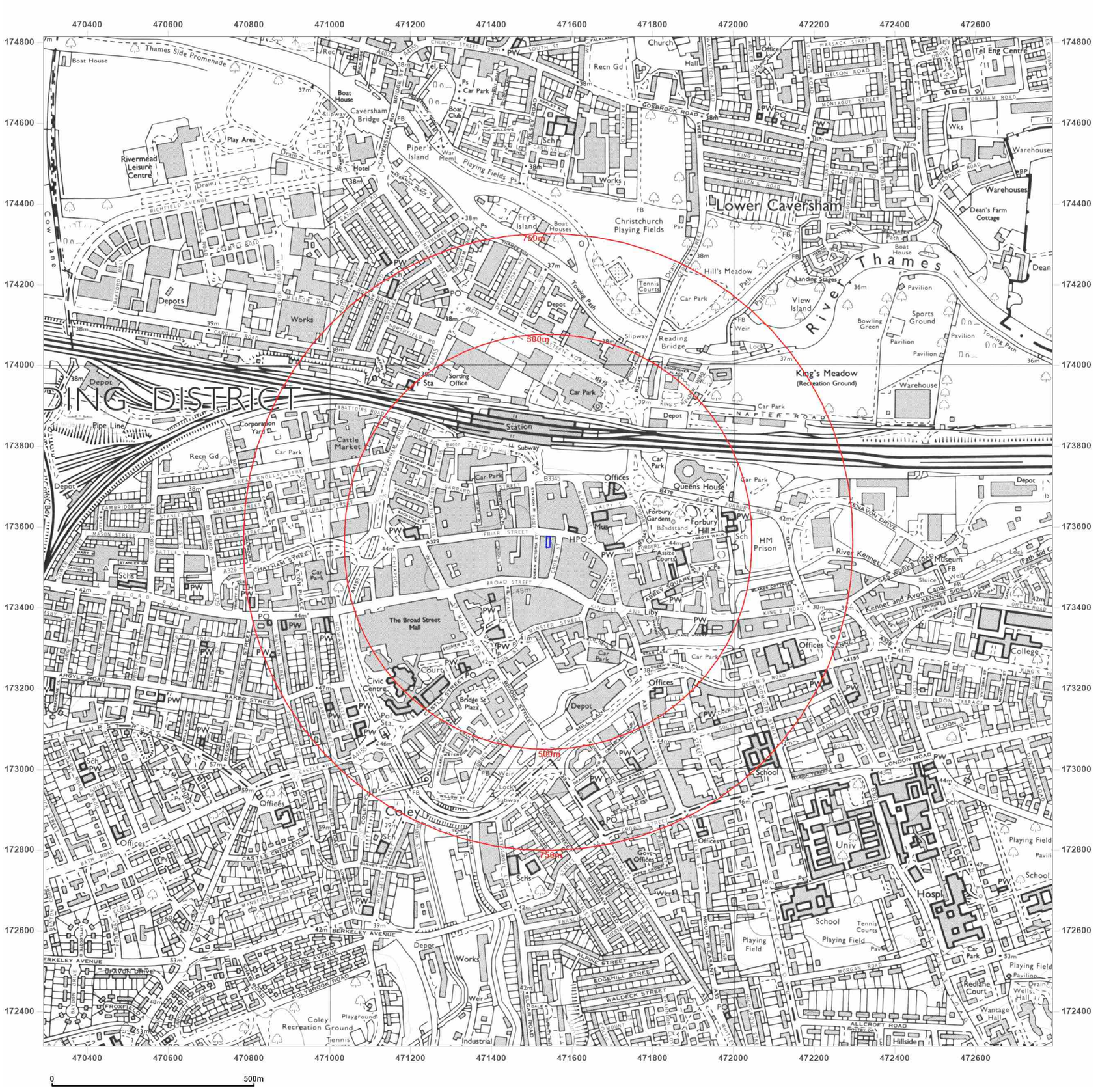
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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1989**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1987
Revised 1989
Edition N/A
Copyright N/A
Levelled N/A

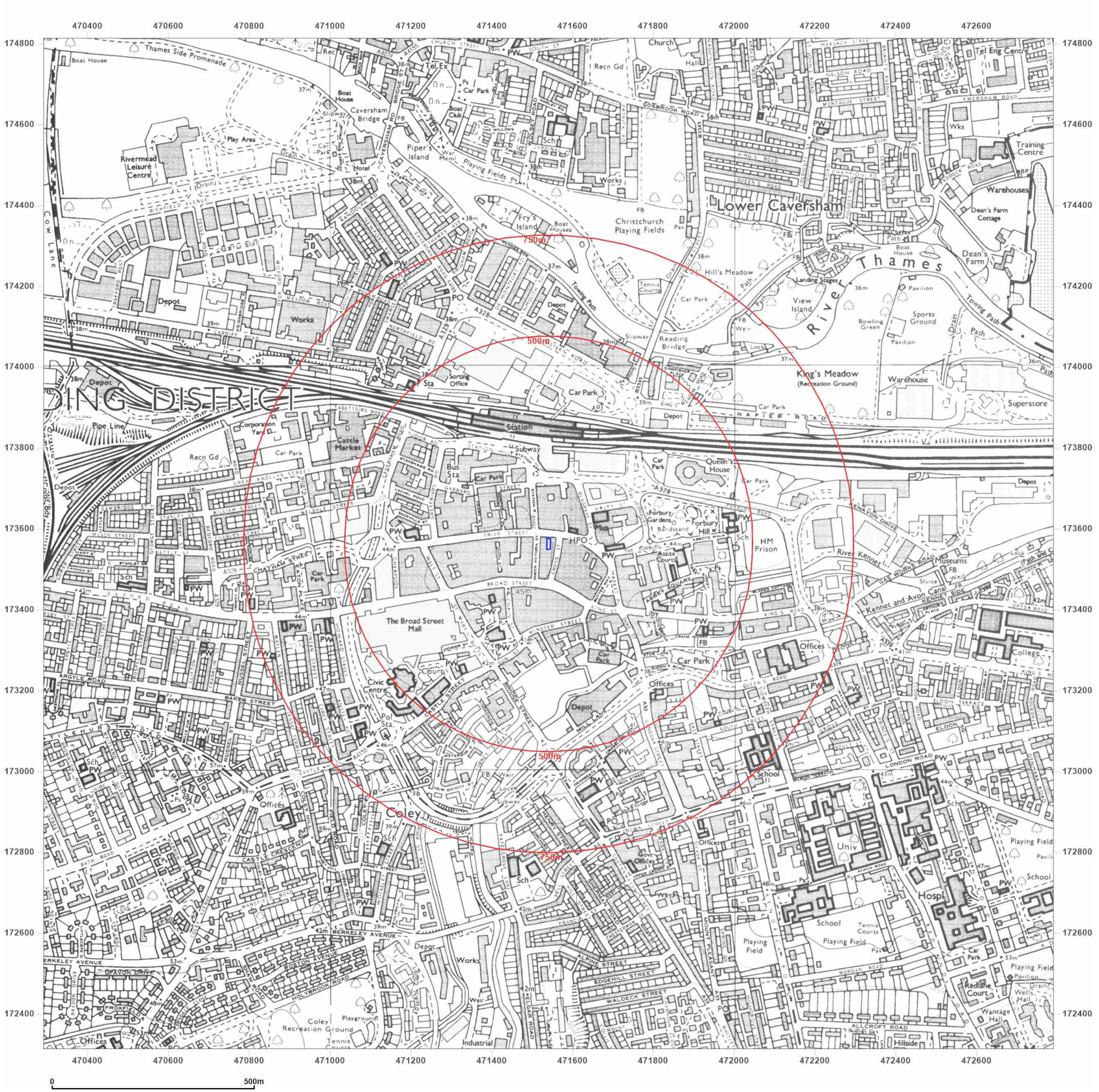
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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **1994**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1987
Revised 1994
Edition N/A
Copyright N/A
Levelled N/A

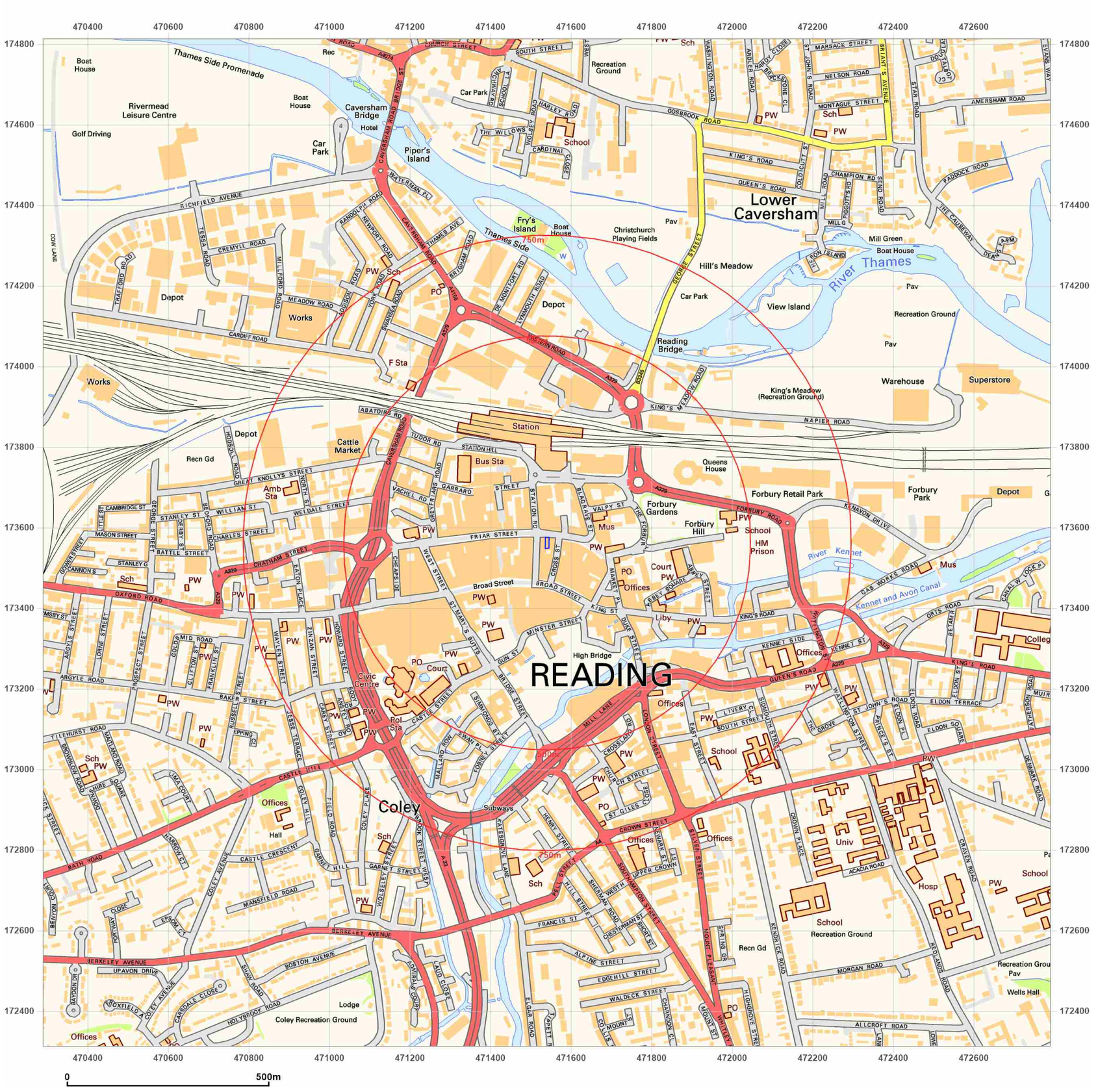
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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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2001

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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING,
RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

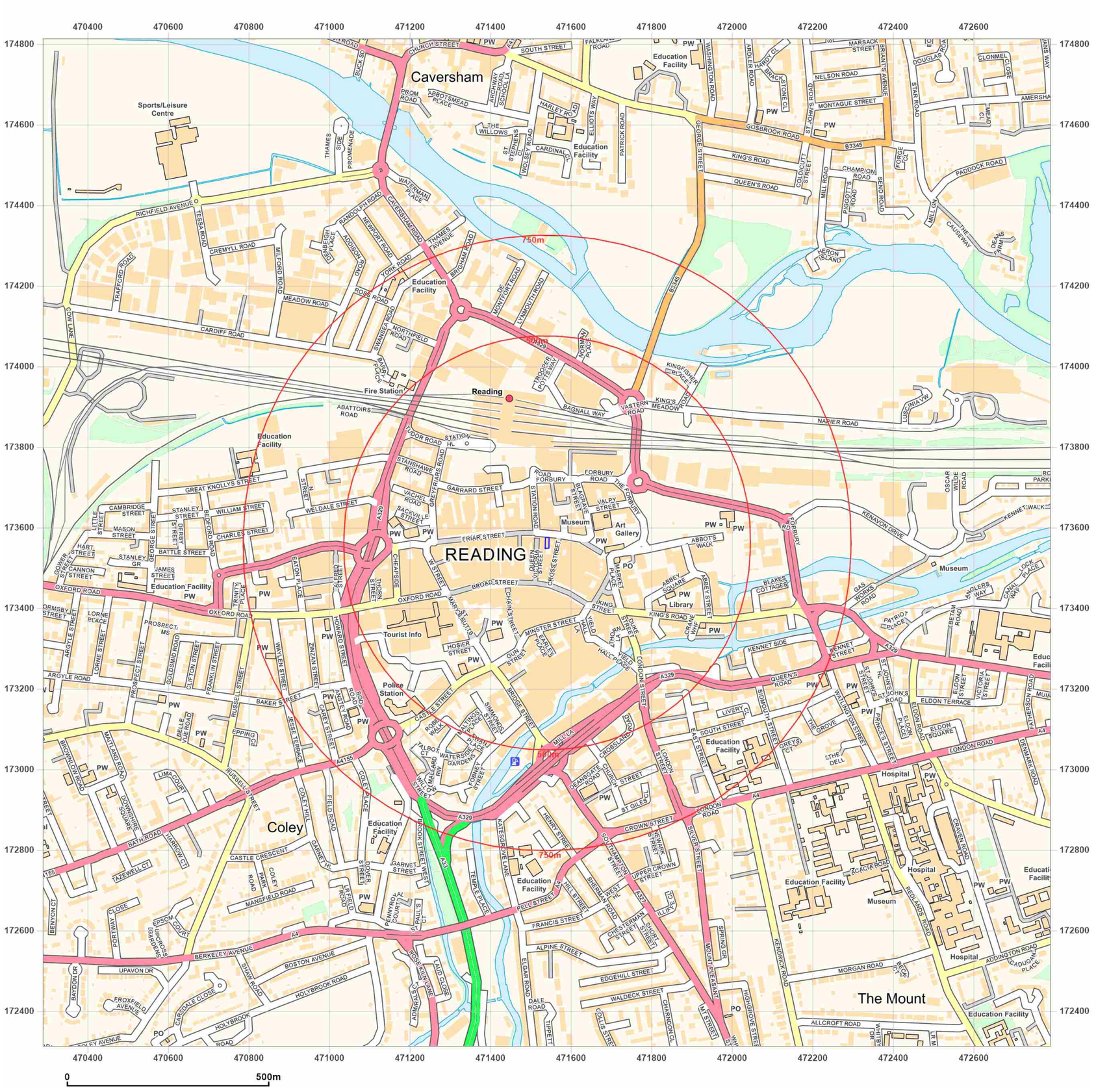
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Groundsure INSIGHTS

Site Details:

153, FRIAR STREET, READING, RG1 1HE

Client Ref: 25739-GELO
Report Ref: HYD-8984784
Grid Ref: 471540, 173563

Map Name: National Grid

Map date: **2022**

Scale: 1:10,000

Printed at: 1:10,000

N W E S

2022

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Hydrock

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UNEXPLODED BOMB RISK MAP

zeticaUXO

SITE LOCATION

Map Centre: 471490,173888



LEGEND

- **High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- **Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- **Low:** Areas indicated as having 15 bombs per 1000acre or less.

miltary	**industry**	**UXO find**
transport	**dock**	**Luftwaffe targets**
utilities	**Bombing decoy**	**other**

How to use your Unexploded Bomb (UXB) risk map?

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

What do I do if my site is in a moderate or high risk area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites in a moderate or high UXB risk area.

Similarly, if your site is near to a designated Luftwaffe target or bombing decoy then additional detailed research is recommended.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirms that there is a low potential for UXO to be present on your site then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

tel: **+44 (0) 1993 886682**

email: **uxo@zetica.com**

web: **www.zeticauxo.com**

The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: **(https://zeticauxo.com/downloads-and-resources/risk-maps/)**

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgment. The copyright remains with Zetica Ltd.

It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.

Your Ref: PO19122
Our Ref: 332511268//CBH//SC/HG/CB

24th August 2022

Hydrock Consultants Limited
Over Court Barns
Over Lane
Almondsbury
Bristol
BS32 4DF
United Kingdom

Attention of: Kirsty Beecham

Dear Ms Beecham,

RE: STANTEC FACTUAL CAVITIES DATABASE SEARCH FOR THE SITE AT 153 FRIAR STREET, READING.

We refer to your email dated 12th August 2022, regarding the above. We thank you for your instruction to carry out a factual search of the Stantec Natural and Non-Coal Mining Cavities Database for the above-named site.

The Cavities Database search has been carried out for the site centred at National Grid Reference SU 71531 73577, as provided.

NATURAL CAVITY RECORDS

A search of the Stantec Natural Cavities Database indicated that there are 5 natural cavity records within 0.5km of the site centre, as shown in Table 1 below.

Table 1: Stantec Natural Cavities Database records

Approximate NGR	Approximate distance from site centre (m)	Recorded Location	Geology	Natural Cavity Details	Source
SU 7155 7340	170 (S)	Chain Street / Broad Street, Reading, Berkshire	**Superficial:** Taplow Gravel **Solid:** Chalk Group	5x Solution Pipes	Reading Borough Council (2009)
SU 715 734	180 (S)	Broad Street, Reading, Berkshire	**Superficial:** Taplow Gravel **Solid:** Chalk Group	3x Solution Pipes	Reading Borough Council (2009)
SU 715 733	270 (S)	Castle Street / Bridge Street, Reading, Berkshire	**Superficial:** Taplow Gravel **Solid:** Chalk Group	1x Solution Pipe	Reading Borough Council (2009)

Caversham Bridge House
Waterman Place
Reading
Berkshire RG1 8DN

Telephone: +44 (0)118 950 0761
email: PBA.Reading@stantec.com

Registered Office:
Stantec UK Ltd
Buckingham Court
Kingsmead Business Park
Frederick Place, London Road
High Wycombe HP11 1JU
Registered in England No. 1188070

Approximate NGR	Approximate distance from site centre (m)	Recorded Location	Geology	Natural Cavity Details	Source
SU 714 732	410 (SW)	Castle Street / Bridge Street, Reading, Berkshire	**Superficial:** Taplow Gravel **Solid:** Chalk Group	2x Solution Pipes	Reading Borough Council (2009)
SU 711 734	470 (W)	Oxford Road, Reading, Berkshire	**Superficial:** Taplow Gravel **Solid:** Chalk Group	3x Solution Pipes	Reading Borough Council (2009)

MINING CAVITY RECORDS

A search of the Stantec Mining Cavities Database indicated that there are no man-made mining cavity records within 0.5km of the site centre. The closest recorded mining cavity is located approximately 680m south of the site in the form of a recorded subsidence event over a possible excavation/shallow bell pit.

Subject to the following note, according to Stantec Cavities Databases, no records pertaining to natural or mining cavities appear to be present within the site footprint. We draw your attention to the fact that the absence of, or the presence of, existing records for the site should not be considered conclusive – the information provided is indicative only. For any decision on investment, construction or any other actions relating to the project, further investigations will be required to confirm ground conditions.

We trust that the information presented will assist you, but if you have any queries then please do not hesitate to contact the writer. We will invoice for this work at the end of the month and our payment terms are strictly 28 days.

Yours sincerely,

SJChandler

Stuart Chandler
Associate
on behalf of Stantec UK Ltd

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

The work undertaken by Stantec was carried out on a fixed fee basis and in accordance with our Standard Terms and Conditions, a copy of which is attached to this report.

IN NO EVENT SHALL STANTEC BE LIABLE FOR ANY LOSS OR DAMAGE INCLUDING, WITHOUT LIMITATION, INDIRECT OR CONSEQUENTIAL LOSS OR DAMAGE ARISING FROM THE USE OF THE DATA FROM THE STANTEC CAVITIES DATABASES.

The Natural Cavities & Mining Cavities Databases have been compiled by Stantec (Stantec Cavities Databases). They contain information collected since the 1980s from multiple sources including: academic publications, public/business organisations, online resources and commercial project experience. The databases are managed and updated with new records at regular intervals. The Stantec Cavities Databases provide information to aid further assessment and should not be used alone to make final decisions on investment or construction on a site as further investigation may be

necessary. Given the challenges of source data diversity, quality and age the Stantec Cavities Databases cannot guarantee to contain a complete set of information relevant to a site, sometimes records may have been inaccurately positioned, incorrectly interpreted or missed. The data is not intended to be used in place of obtaining professional advice for a specific project. The Stantec Cavities Databases are copyrighted and shall be treated as confidential information and must not, without the prior written consent of Stantec, be disclosed to a third party.

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo
Insight

153, FRIAR STREET, READING, RG1 1HE

Order Details

Date: 16/08/2022

Your ref: 25739-GELO

Our Ref: HYD-8984785

Site Details

Location: 471539 173563

Area: 0.02 ha

Authority: Reading Borough Council



Summary of findings p. 2

OS MasterMap site plan p.13

Aerial image p. 8

groundsure.com/insightuserguide

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	Historical industrial land uses	0	0	29	126	-
20	1.2	Historical tanks	0	0	9	67	-
23	1.3	Historical energy features	0	0	12	37	-
25	1.4	Historical petrol stations	0	0	1	0	-
26	1.5	Historical garages	0	2	6	30	-
27	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
28	2.1	Historical industrial land uses	0	0	39	151	-
35	2.2	Historical tanks	0	0	9	107	-
40	2.3	Historical energy features	0	0	41	72	-
44	2.4	Historical petrol stations	0	0	1	0	-
44	2.5	Historical garages	0	5	11	52	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
48	3.1	Active or recent landfill	0	0	0	0	-
48	3.2	Historical landfill (BGS records)	0	0	0	0	-
49	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
49	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
49	3.5	Historical waste sites	0	0	0	0	-
49	3.6	Licensed waste sites	0	0	0	1	-
50	3.7	Waste exemptions	0	3	2	15	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
52	4.1	Recent industrial land uses	0	1	22	-	-
54	4.2	Current or recent petrol stations	0	0	0	0	-
54	4.3	Electricity cables	0	0	0	0	-
54	4.4	Gas pipelines	0	0	0	0	-
55	4.5	Sites determined as Contaminated Land	0	0	0	0	-

55	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
55	4.7	Regulated explosive sites	0	0	0	0	-
55	4.8	Hazardous substance storage/usage	0	0	0	0	-
55	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
56	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
56	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
56	4.12	Radioactive Substance Authorisations	0	0	0	0	-
56	**4.13**	**Licensed Discharges to controlled waters**	0	0	1	17	-
59	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
59	4.15	Pollutant release to public sewer	0	0	0	0	-
59	4.16	List 1 Dangerous Substances	0	0	0	0	-
59	4.17	List 2 Dangerous Substances	0	0	0	0	-
59	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	0	15	-
61	4.19	Pollution inventory substances	0	0	0	0	-
61	4.20	Pollution inventory waste transfers	0	0	0	0	-
62	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
63	**5.1**	**Superficial aquifer**	Identified (within 500m)				
64	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
65	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
66	**5.4**	**Groundwater vulnerability- soluble rock risk**	Identified (within 0m)				
66	5.5	Groundwater vulnerability- local information	None (within 0m)				
67	**5.6**	**Groundwater abstractions**	0	0	0	1	13
71	**5.7**	**Surface water abstractions**	0	0	0	2	4
72	**5.8**	**Potable abstractions**	0	0	0	1	4
74	5.9	Source Protection Zones	0	0	0	0	-
74	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
75	**6.1**	**Water Network (OS MasterMap)**	0	0	3	-	-

76	6.2	Surface water features	0	0	0	-	-
76	**6.3**	**WFD Surface water body catchments**	1	-	-	-	-
76	**6.4**	**WFD Surface water bodies**	0	0	0	-	-
77	**6.5**	**WFD Groundwater bodies**	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
78	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
78	7.2	Historical Flood Events	0	0	0	-	-
78	7.3	Flood Defences	0	0	0	-	-
79	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
79	7.5	Flood Storage Areas	0	0	0	-	-
80	7.6	Flood Zone 2	None (within 50m)				
80	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
81	**8.1**	**Surface water flooding**	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
83	**9.1**	**Groundwater flooding**	Moderate (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
84	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
84	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
84	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
84	10.4	Special Protection Areas (SPA)	0	0	0	0	0
85	10.5	National Nature Reserves (NNR)	0	0	0	0	0
85	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
85	10.7	Designated Ancient Woodland	0	0	0	0	0
85	10.8	Biosphere Reserves	0	0	0	0	0
86	10.9	Forest Parks	0	0	0	0	0
86	10.10	Marine Conservation Zones	0	0	0	0	0
86	10.11	Green Belt	0	0	0	0	0
86	10.12	Proposed Ramsar sites	0	0	0	0	0

86	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
87	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
87	10.15	Nitrate Sensitive Areas	0	0	0	0	0
87	**10.16**	**Nitrate Vulnerable Zones**	0	0	1	0	1
88	10.17	SSSI Impact Risk Zones	0	-	-	-	-
88	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
89	11.1	World Heritage Sites	0	0	0	-	-
90	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
90	11.3	National Parks	0	0	0	-	-
90	**11.4**	**Listed Buildings**	0	9	46	-	-
93	**11.5**	**Conservation Areas**	0	0	2	-	-
93	**11.6**	**Scheduled Ancient Monuments**	0	0	2	-	-
93	**11.7**	**Registered Parks and Gardens**	0	0	1	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
95	**12.1**	**Agricultural Land Classification**	Urban (within 250m)				
96	12.2	Open Access Land	0	0	0	-	-
96	12.3	Tree Felling Licences	0	0	0	-	-
96	12.4	Environmental Stewardship Schemes	0	0	0	-	-
96	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
97	13.1	Priority Habitat Inventory	0	0	0	-	-
97	13.2	Habitat Networks	0	0	0	-	-
97	13.3	Open Mosaic Habitat	0	0	0	-	-
97	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
98	**14.1**	**10k Availability**	Identified (within 500m)				
99	**14.2**	**Artificial and made ground (10k)**	0	0	1	6	-
101	**14.3**	**Superficial geology (10k)**	1	0	1	4	-

102	14.4	Landslip (10k)	0	0	0	0	-
103	**14.5**	**Bedrock geology (10k)**	1	0	0	0	-
104	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
105	**15.1**	**50k Availability**	Identified (within 500m)				
106	15.2	Artificial and made ground (50k)	0	0	0	0	-
106	15.3	Artificial ground permeability (50k)	0	0	-	-	-
107	**15.4**	**Superficial geology (50k)**	1	0	1	4	-
108	**15.5**	**Superficial permeability (50k)**	Identified (within 50m)				
108	15.6	Landslip (50k)	0	0	0	0	-
108	15.7	Landslip permeability (50k)	None (within 50m)				
109	**15.8**	**Bedrock geology (50k)**	1	0	0	0	-
110	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
110	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
111	**16.1**	**BGS Boreholes**	0	0	18	-	-
Page	Section	Natural ground subsidence					
113	**17.1**	**Shrink swell clays**	Negligible (within 50m)				
114	**17.2**	**Running sands**	Very low (within 50m)				
115	**17.3**	**Compressible deposits**	Negligible (within 50m)				
116	**17.4**	**Collapsible deposits**	Very low (within 50m)				
117	**17.5**	**Landslides**	Very low (within 50m)				
118	**17.6**	**Ground dissolution of soluble rocks**	Very low (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
120	**18.1**	**Natural cavities**	0	0	2	3	-
121	18.2	BritPits	0	0	0	0	-
121	18.3	Surface ground workings	0	0	0	-	-
121	18.4	Underground workings	0	0	0	0	0
122	18.5	Historical Mineral Planning Areas	0	0	0	0	-

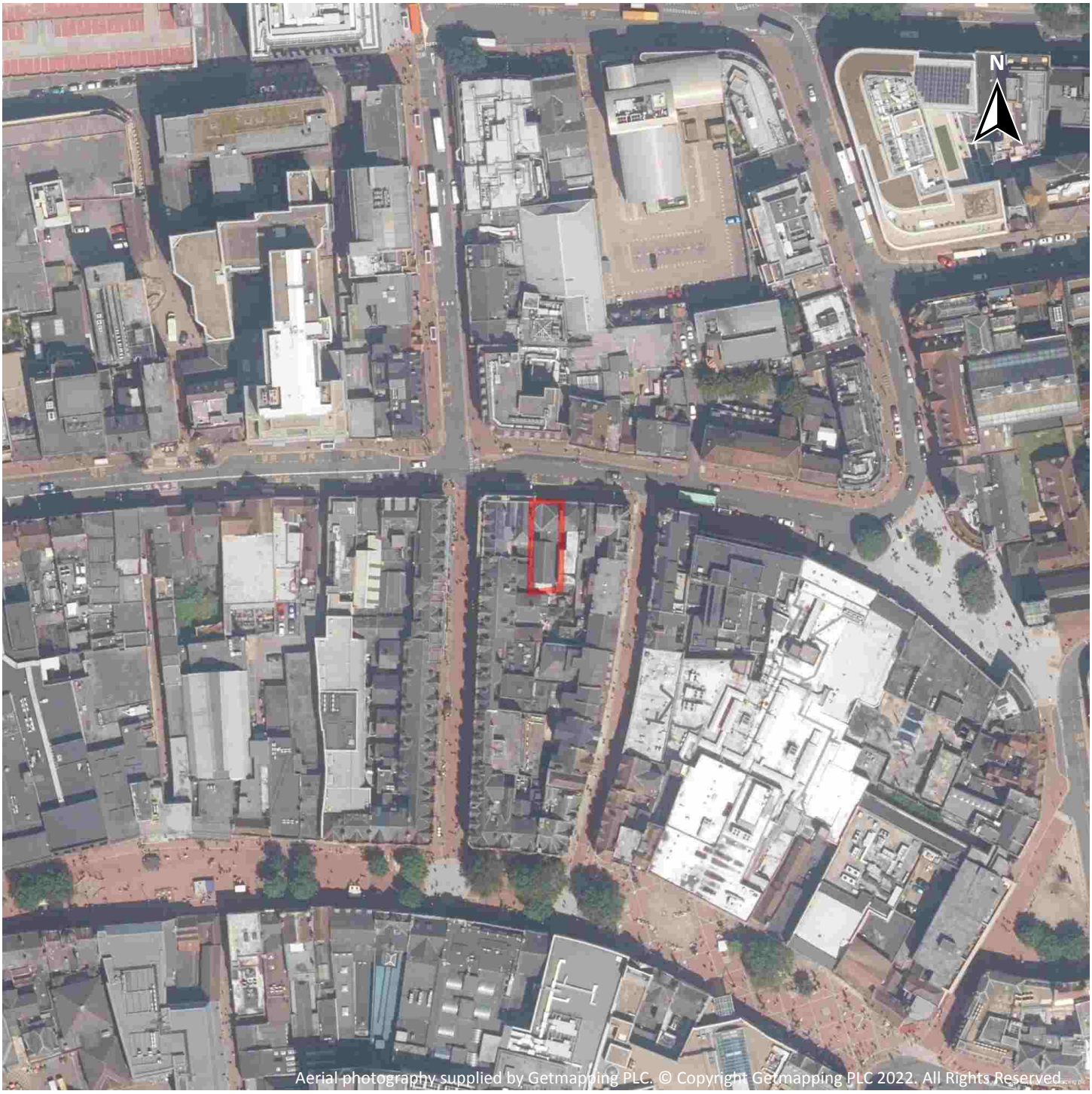
122	**18.6**	**Non-coal mining**	1	0	1	0	44
127	**18.7**	**Mining cavities**	0	0	0	0	24
128	**18.8**	**JPB mining areas**	Identified (within 0m)				
129	18.9	Coal mining	None (within 0m)				
129	18.10	Brine areas	None (within 0m)				
129	18.11	Gypsum areas	None (within 0m)				
129	18.12	Tin mining	None (within 0m)				
129	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
130	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
131	**20.1**	**BGS Estimated Background Soil Chemistry**	1	2	-	-	-
131	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
131	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
132	21.1	Underground railways (London)	0	0	0	-	-
132	21.2	Underground railways (Non-London)	0	0	0	-	-
133	21.3	Railway tunnels	0	0	0	-	-
133	**21.4**	**Historical railway and tunnel features**	0	0	34	-	-
134	21.5	Royal Mail tunnels	0	0	0	-	-
135	21.6	Historical railways	0	0	0	-	-
135	**21.7**	**Railways**	0	0	9	-	-
135	**21.8**	**Crossrail 1**	0	0	0	1	-
136	21.9	Crossrail 2	0	0	0	0	-
136	21.10	HS2	0	0	0	0	-

Recent aerial photograph

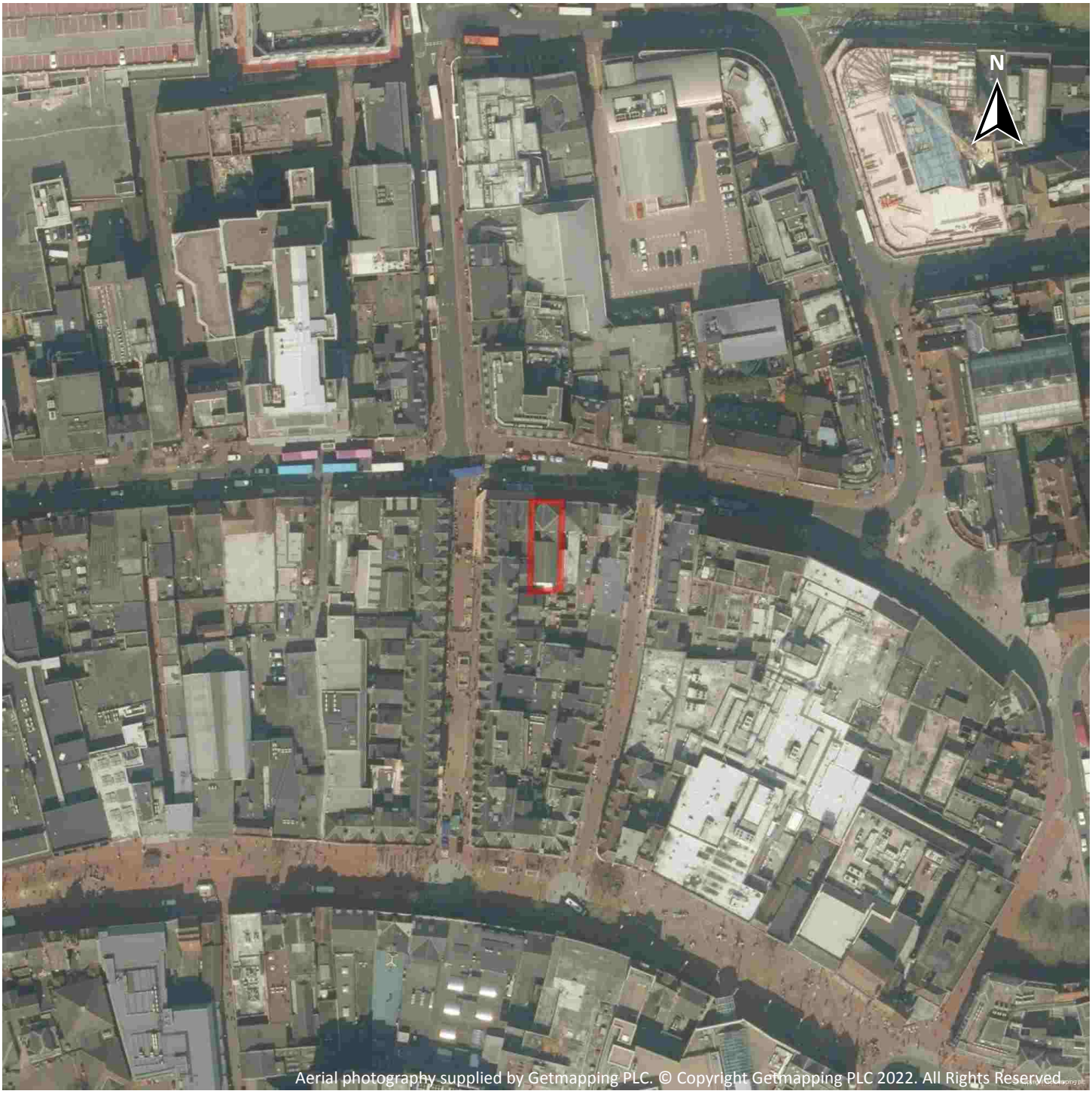


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Capture Date: 29/06/2019

Site Area: 0.02ha

Recent site history - 2015 aerial photograph

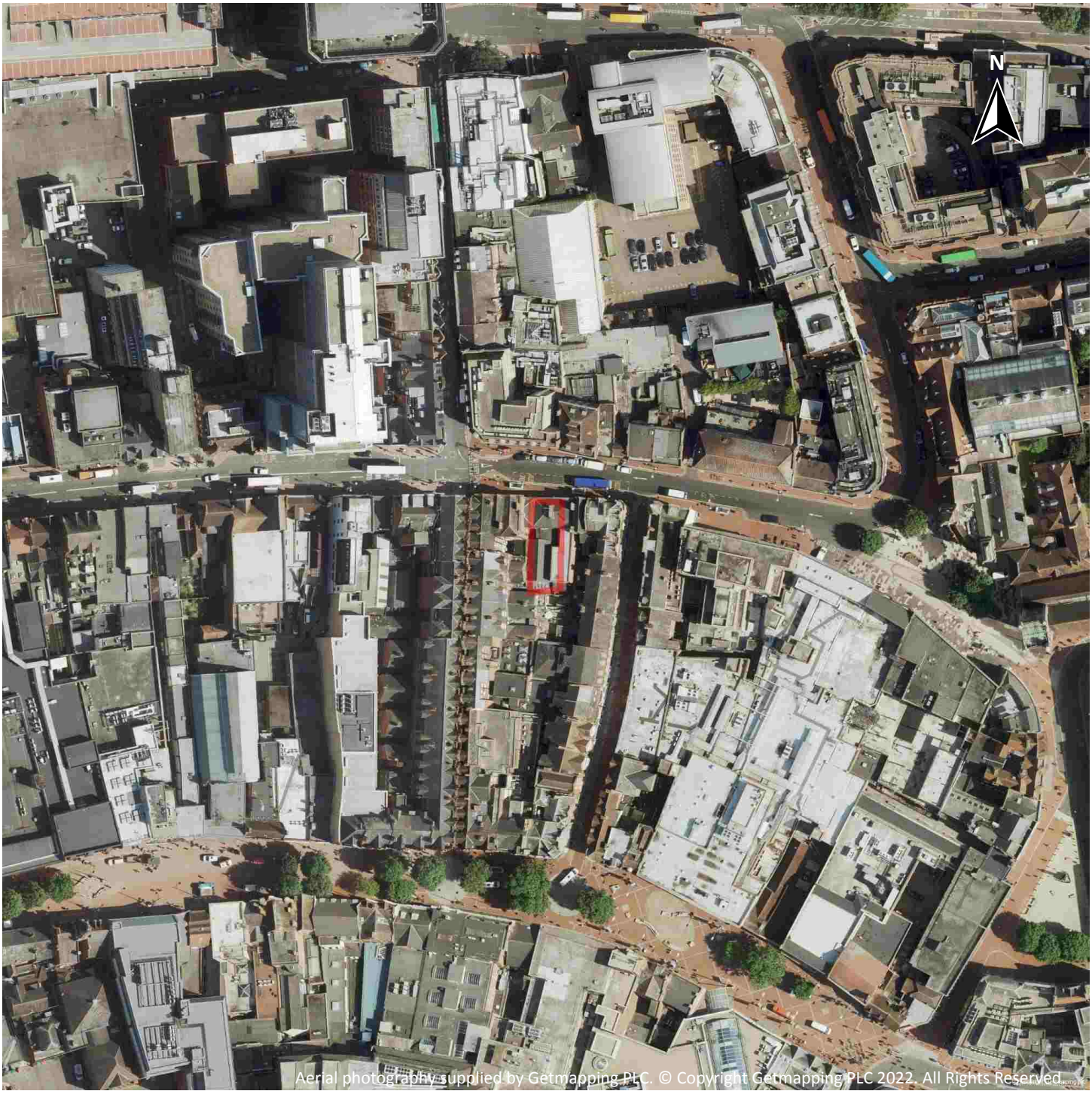


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Capture Date: 20/04/2015

Site Area: 0.02ha

Recent site history - 2013 aerial photograph

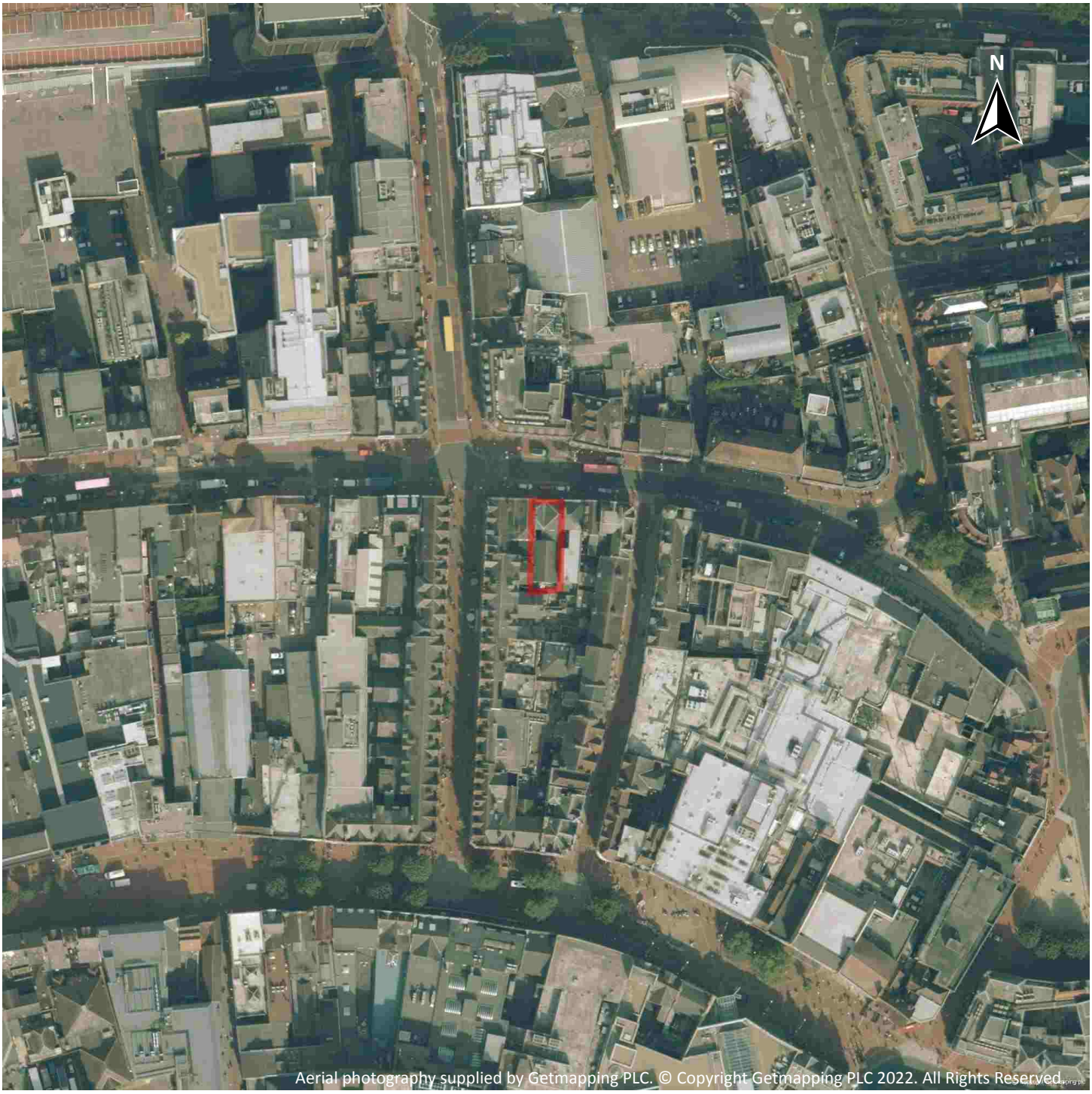


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Capture Date: 08/07/2013

Site Area: 0.02ha

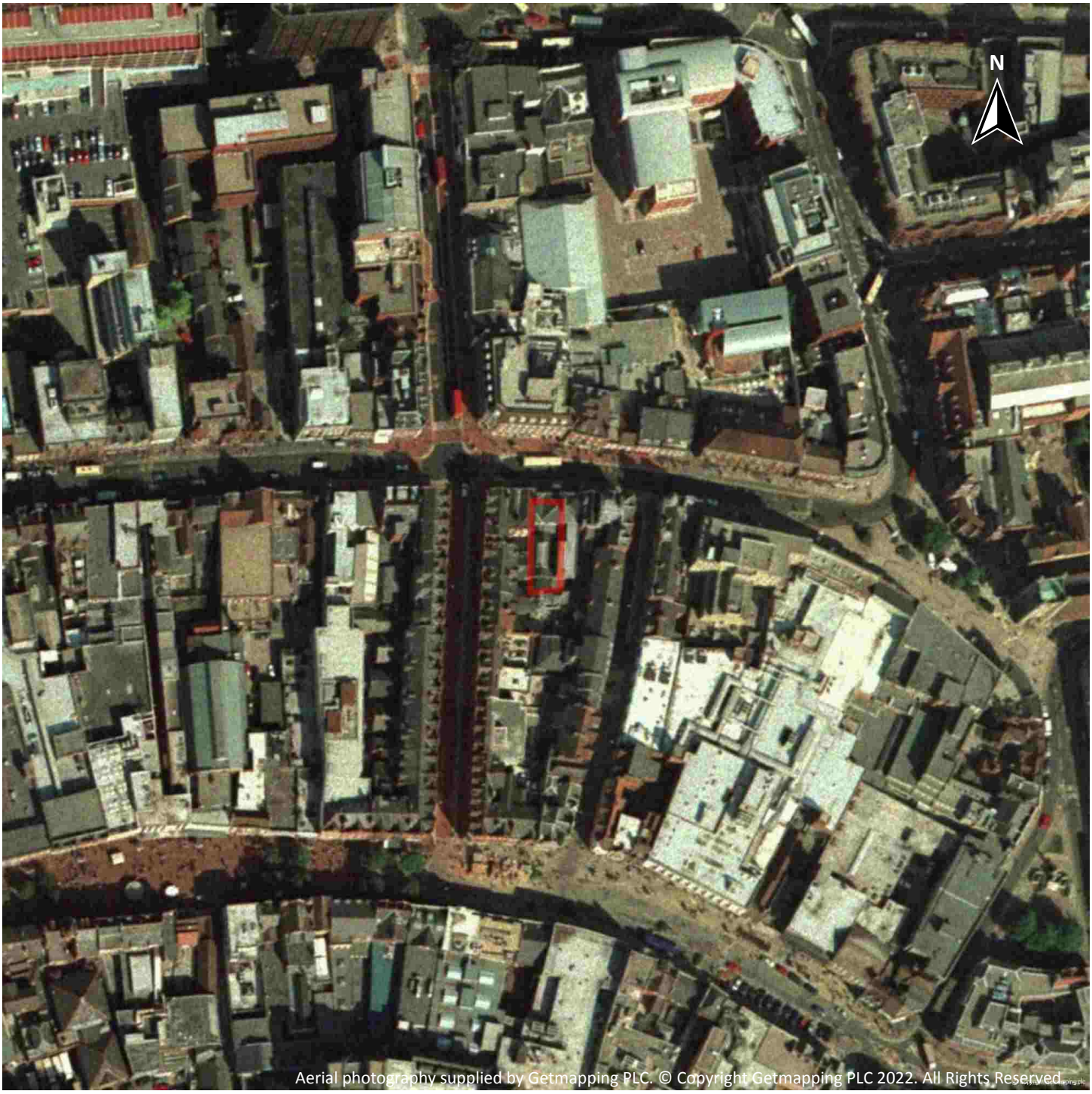
Recent site history - 2010 aerial photograph



Capture Date: 22/09/2010

Site Area: 0.02ha

Recent site history - 1999 aerial photograph

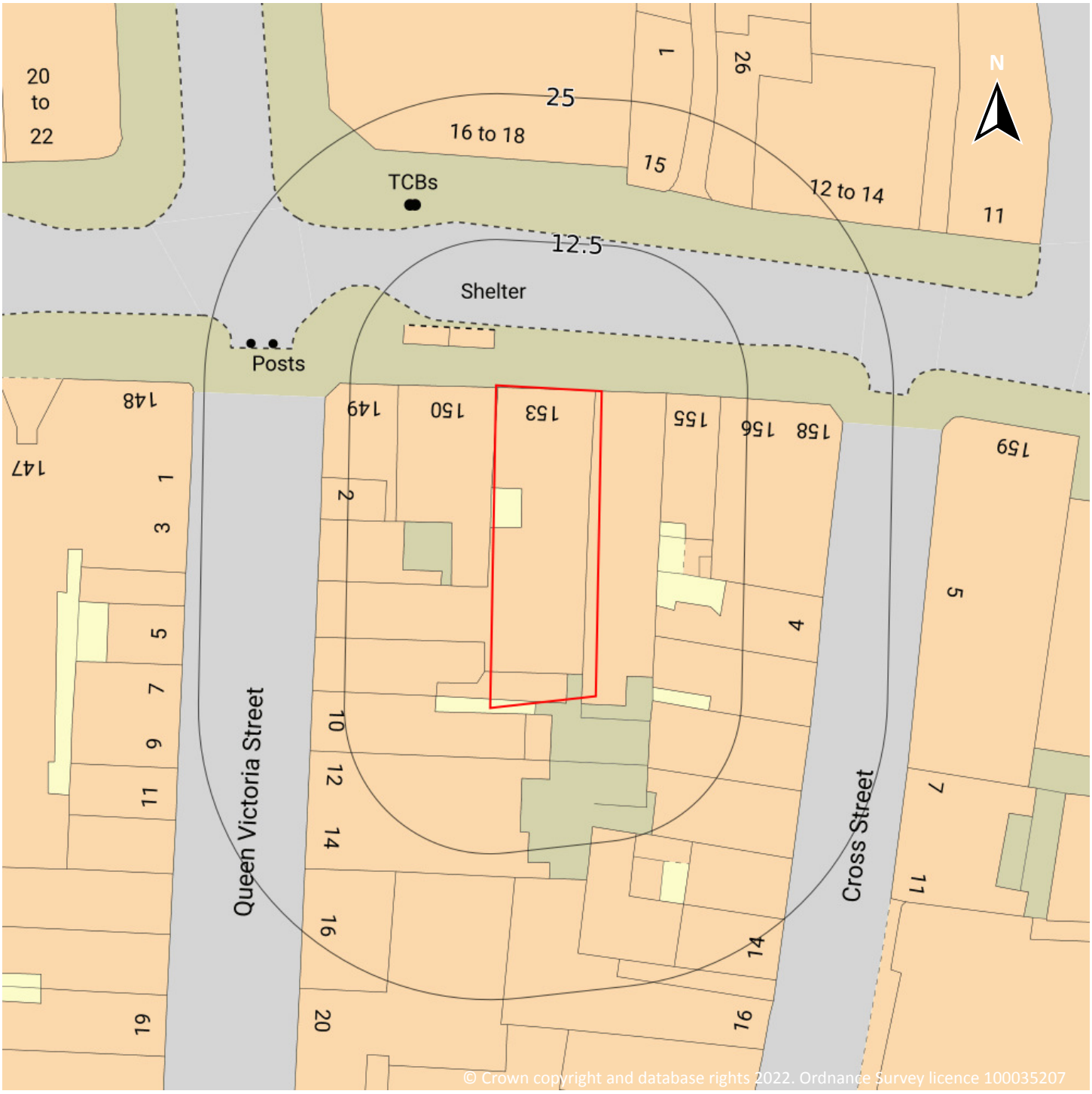


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Capture Date: 04/09/1999

Site Area: 0.02ha

OS MasterMap site plan



Site Area: 0.02ha

1 Past land use



1.1 Historical industrial land uses

Records within 500m	155

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
B	112m E	Telegraph House	1971	1883555

ID	Location	Land use	Dates present	Group ID
D	129m N	Garage	1971	1883648
E	144m N	Railway Sidings	1897 - 1913	1955038
E	151m N	Railway Sidings	1932 - 1977	1908472
F	151m N	Railway Building	1962	1866740
B	162m E	Police Station	1971	1876192
G	164m N	Railway Station	1898 - 1994	1906538
F	168m N	Garage	1971	1883649
F	170m N	Terminus	1938	1933328
F	174m N	Terminus	1933	1949896
F	177m N	Terminus	1898	1948431
G	181m N	Railway Station	1962	1936088
F	183m N	Terminus	1938	1945798
F	183m N	Terminus	1913	1969032
D	191m NW	Bus Station	1994	1864796
F	211m N	Railway Building	1938	1919647
F	211m N	Railway Building	1913	1957368
J	218m NE	Unspecified Factory	1962	1919036
K	218m N	Railway Sidings	1989 - 1994	1913684
G	221m N	Railway Station	1971 - 1989	1962142
G	227m N	Railway Station	1913	1937402
G	227m N	Railway Station	1938	1962601
G	229m N	Railway Station	1938	1948567
G	233m N	Railway Station	1933	1958834
D	243m NW	Smithy	1913	1875839
N	245m N	Railway Building	1913	1892409
N	245m N	Railway Building	1938	1958202
N	245m N	Railway Building	1938	1929321
3	248m NE	Railway Building	1913	1866731

ID	Location	Land use	Dates present	Group ID
J	253m NE	Biscuit Factory	1933	1889569
O	255m NE	Railway Building	1938	1866738
O	256m NE	Railway Building	1913	1866739
O	258m NE	Railway Buildings	1938	1856209
O	263m NE	Railway Building	1913	1918602
R	266m NW	Railway Sidings	1933	1905455
O	273m NE	Railway Building	1938	1919982
E	296m N	Railway Sidings	1933	1965409
T	301m N	Railway Works	1898	1968682
K	302m N	Railway Building	1898	1945084
5	303m E	Unspecified Tank	1971	1858410
T	305m N	Unspecified Works	1962 - 1971	1903310
T	305m N	Unspecified Works	1977	1943410
T	306m N	Railway Works	1913	1932396
T	308m N	Railway Works	1938	1952064
T	308m N	Unspecified Works	1933 - 1938	1929531
K	309m N	Railway Building	1938	1907514
K	309m N	Railway Building	1913	1967493
V	313m SW	Smithy	1913	1875838
W	316m S	Brewery	1933	1909883
X	317m NW	Railway Building	1977	1901767
X	317m NW	Railway Building	1989 - 1994	1964573
W	317m S	Unspecified Commercial/Industrial	1898	1874675
W	317m S	Brewery	1938	1887421
W	317m S	Brewery	1913	1939065
U	318m S	Unspecified Tanks	1977	1888600
U	318m S	Unspecified Tanks	1971	1947112
O	319m NE	Railway Building	1898	1904464

ID	Location	Land use	Dates present	Group ID
G	319m N	Railway Building	1898	1866756
W	319m S	Brewery	1971	1893062
W	319m S	Brewery	1977	1899772
W	320m S	Brewery	1938	1954219
O	323m NE	Railway Building	1938	1941121
O	323m NE	Railway Building	1913	1956328
U	330m S	Unspecified Tank	1898	1858411
U	331m S	Unspecified Tank	1898	1914554
U	331m S	Unspecified Tank	1913	1961041
Z	332m NE	Railway Building	1989 - 1994	1904291
Z	340m NE	Railway Building	1933	1893308
J	342m E	Unspecified Heap	1933	1869773
U	342m S	Unspecified Mill	1898	1872613
J	347m NE	Railway Building	1913	1886365
J	347m NE	Railway Building	1938	1935030
AC	349m N	Railway Building	1989 - 1994	1902104
AC	349m N	Railway Building	1977	1923638
AC	349m N	Railway Building	1971	1956131
6	355m N	Railway Building	1933	1866804
U	355m SE	Unspecified Depot	1989 - 1994	1895129
U	355m SE	Unspecified Depot	1977	1945841
J	364m NE	Railway Building	1962	1945924
AD	365m NE	Unspecified Depot	1989 - 1994	1923361
AE	365m S	Brewery	1971	1886356
AE	365m S	Brewery	1977	1891852
J	365m NE	Railway Building	1898	1919754
AF	367m SE	Unspecified Wharf	1989 - 1994	1908537
U	369m S	Unspecified Commercial/Industrial	1933	1874677

ID	Location	Land use	Dates present	Group ID
AF	369m SE	Unspecified Wharf	1938	1897348
AG	371m N	Railway Building	1933	1866803
J	371m NE	Engine Shed	1938	1912434
J	371m NE	Engine Shed	1913	1944047
Z	374m NE	Railway Building	1962 - 1971	1946921
AF	375m SE	Unspecified Wharf	1938	1889621
J	376m NE	Engine Shed	1933	1942641
J	377m E	Railway Buildings	1898	1856210
AG	377m N	Railway Building	1933	1866802
Z	378m NE	Railway Building	1938	1899828
J	379m E	Railway Building	1962	1893606
J	380m NE	Railway Building	1898	1866737
J	381m E	Goods Sheds	1913	1946019
J	382m E	Railway Building	1898	1942045
Z	384m NE	Railway Building	1933	1898347
J	386m E	Goods Sheds	1913	1897218
J	386m E	Goods Sheds	1933 - 1938	1944696
J	389m E	Goods Sheds	1938	1940218
U	396m S	Railway Sidings	1933	1883121
AH	398m E	Sawmills	1898	1885573
AH	398m E	Sawmills	1938	1923179
AH	398m E	Sawmills	1913	1963654
AH	401m E	Sawmill	1938	1884813
AA	401m SE	Smithy	1913	1875836
AH	402m E	Sawmills	1933	1964023
J	412m E	Goods Sheds	1938	1904868
U	416m SE	Unspecified Factory	1977	1914345
J	417m E	Goods Sheds	1913	1934127

ID	Location	Land use	Dates present	Group ID
AJ	421m N	Iron Works	1910	1942788
U	422m SE	Unspecified Factory	1971	1942763
AK	427m N	Electric Works	1910	1940165
AL	432m NE	Railway Building	1898	1893126
J	433m E	Railway Building	1962	1946643
AL	435m NE	Railway Building	1962 - 1971	1968283
J	437m E	Railway Building	1898	1888446
AL	438m NE	Goods Shed	1938	1887654
AL	438m NE	Goods Shed	1977	1891848
AL	438m NE	Goods Shed	1913	1897099
AO	441m SE	Unspecified Disused Wharf	1933	1884613
J	441m E	Goods Sheds	1913	1946450
AL	442m NE	Goods Shed	1938	1903372
AL	444m NE	Goods Shed	1933	1897844
10	444m W	Unspecified Depot	1977	1862097
R	445m NW	Railway Building	1913	1866755
11	446m NE	Boat Houses	1898	1864324
AJ	449m N	Iron Works	1897	1908602
AJ	449m N	Iron Works	1900	1917225
AQ	463m N	Railway Sidings	1938	1947411
AQ	463m N	Railway Sidings	1910	1953560
R	464m NW	Railway Building	1898	1866754
AL	466m NE	Railway Buildings	1989 - 1994	1940197
12	466m SW	Unspecified Commercial/Industrial	1933	1874676
AJ	473m N	Railway Sidings	1901	1887263
13	475m NE	Boat Houses	1898	1864323
AS	478m E	Railway Building	1898	1866732
AK	480m N	Electric Works	1897 - 1900	1940569

ID	Location	Land use	Dates present	Group ID
AK	481m N	Unspecified Depot	1989 - 1994	1914143
AH	481m E	Sawmills	1938	1888823
AH	481m E	Sawmills	1913	1935248
AH	481m E	Sawmills	1898	1938964
AS	483m NE	Railway Building	1913	1910415
AS	483m NE	Railway Building	1938	1926873
14	485m E	Goods Sheds	1938	1887299
AO	489m SE	Unspecified Wharf	1938	1946894
AV	490m NW	Fire Station	1962 - 1971	1898729
AV	490m NW	Fire Station	1977	1957046
AV	490m NW	Fire Station	1989 - 1994	1957033
AW	492m SW	Police Station	1989 - 1994	1911315
AW	492m SW	Police Station	1977	1918131
15	500m NE	Boat House	1913	1867416

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**76**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
D	159m NW	Tank or Trough	1879	326647
D	159m NW	Tank or Trough	1879	327920
D	159m NW	Tank or Trough	1879	312006
F	165m N	Unspecified Tank	1988	305886

ID	Location	Land use	Dates present	Group ID
H	178m SE	Tank or Trough	1879	317342
H	178m SE	Tank or Trough	1879	324141
I	182m E	Pump and Tank	1879	318353
I	182m E	Pump and Tank	1879	323519
D	241m NW	Unspecified Tank	1969	305869
O	255m NE	Unspecified Tank	1931	320425
O	256m NE	Unspecified Tank	1956 - 1962	315975
O	256m NE	Unspecified Tank	1957 - 1958	325161
L	279m S	Tanks	1879	323161
L	279m S	Tanks	1879	324380
4	286m SW	Unspecified Tank	1931	305870
S	288m W	Unspecified Tank	1879	312605
S	290m W	Unspecified Tank	1912	315638
S	291m W	Unspecified Tank	1900	322205
P	304m E	Unspecified Tank	1988 - 1997	327438
U	308m S	Gas Works	1879 - 1912	313448
U	309m S	Gas Works	1879	319202
K	313m N	Unspecified Tank	1879	305888
U	318m S	Tanks	1968 - 1979	325975
U	324m S	Tanks	1956	317508
U	324m S	Tanks	1962	319738
U	324m S	Tanks	1957 - 1958	316943
Z	325m NE	Unspecified Tank	1912 - 1931	313443
Z	326m NE	Unspecified Tank	1956 - 1962	317418
U	327m S	Gasometer	1879	321935
U	328m S	Gasometer	1879	315866
U	329m S	Gasometer	1879	319443
U	329m S	Gasometer	1879	327004

ID	Location	Land use	Dates present	Group ID
U	329m S	Gasometer	1900	321837
U	330m S	Gasometer	1879	313486
U	330m S	Gasometer	1900 - 1912	325036
U	335m S	Tanks	1956 - 1979	326154
U	347m S	Tanks	1979	325205
U	348m S	Tanks	1962 - 1968	324934
U	350m S	Unspecified Tank	1956 - 1958	312932
J	356m E	Tank or Trough	1879	314196
J	356m E	Tank or Trough	1879	324468
J	358m E	Tank or Trough	1879	312007
P	358m E	Unspecified Tank	1997	320575
P	359m E	Unspecified Tank	1968 - 1988	314358
7	387m S	Unspecified Tank	1970 - 1980	314799
AB	390m NW	Tank or Trough	1879	316845
AB	390m NW	Tank or Trough	1879	324092
AB	390m NW	Tank or Trough	1879	316867
AB	390m NW	Tank or Trough	1879	325471
AI	404m W	Unspecified Tank	1880	314047
AI	404m W	Unspecified Tank	1880	317232
AI	408m W	Unspecified Tank	1880	321877
AI	408m W	Unspecified Tank	1880	318898
AI	421m W	Tank or Trough	1880	321521
AI	421m W	Tank or Trough	1880	325799
W	422m S	Tank or Trough	1879	325240
W	422m S	Tank or Trough	1879	326975
W	424m S	Tank or Trough	1879	312010
9	427m NW	Tank or Trough	1879	312005
U	430m S	Unspecified Tank	1879 - 1900	318579

ID	Location	Land use	Dates present	Group ID
AM	435m SW	Unspecified Tank	1980	328216
AM	435m SW	Unspecified Tank	1970	314248
AM	436m SW	Unspecified Tank	1970 - 1980	321457
AD	437m NE	Unspecified Tank	1971	305887
AD	438m NE	Unspecified Tank	1986	305885
U	459m SE	Unspecified Tank	1968 - 1979	315496
AR	473m NW	Tank or Trough	1879	319837
AR	473m NW	Tank or Trough	1879	326269
AR	473m NW	Tank or Trough	1879	312004
AS	479m NE	Unspecified Tank	1879 - 1962	320456
AS	484m NE	Unspecified Tank	1912 - 1931	313045
AU	484m SE	Unspecified Tank	1956	316764
AU	485m SE	Unspecified Tank	1957 - 1958	314354
AT	491m W	Pump and Tank	1880	313632
AT	491m W	Pump and Tank	1880	317922
AJ	494m N	Unspecified Tank	1972 - 1989	320796

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**49**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
1	90m SW	Electricity Substation	1969 - 1996	198092
2	146m W	Electricity Substation	1986 - 1996	204833

ID	Location	Land use	Dates present	Group ID
B	147m E	Electricity Substation	1971 - 1993	201683
F	163m N	Electricity Substation	1986	201931
F	163m N	Electricity Substation	1971 - 1979	200623
I	190m E	Electricity Substation	1979 - 1993	196184
L	232m S	Electricity Substation	1968 - 1997	203216
M	236m W	Electricity Substation	1986 - 1996	207537
M	237m W	Electricity Substation	1969	192596
M	237m W	Electricity Substation	1979 - 1993	211699
M	239m W	Electricity Substation	1994 - 1996	200407
M	241m W	Electricity Substation	1993	206172
P	261m SE	Electricity Substation	1988	205643
P	262m SE	Electricity Substation	1988 - 1997	208569
Q	263m W	Electricity Substation	1969	189830
Q	269m W	Electricity Substation	1986	204349
Q	270m W	Electricity Substation	1979 - 1993	204406
Q	272m W	Electricity Substation	1994 - 1996	209780
O	300m NE	Electricity Substation	1971	189767
U	308m S	Gas Works	1879 - 1912	196480
U	309m S	Gas Works	1879	209480
Y	317m SW	Electricity Substation	1980 - 1988	209601
U	321m S	Electricity Substation	1968 - 1979	197972
P	326m SE	Electricity Substation	1997	201449
U	327m S	Gasometer	1879	203796
P	329m SE	Electricity Substation	1988	193961
U	329m S	Gasometer	1879 - 1912	199598
U	329m S	Gasometer	1879	201799
U	329m S	Gasometer	1900	208605
P	330m SE	Electricity Substation	1988	207739

ID	Location	Land use	Dates present	Group ID
AA	333m SE	Electricity Substation	1988 - 1997	200145
P	339m SE	Electricity Substation	1968 - 1979	195554
AB	339m NW	Electricity Substation	1993 - 1996	203574
Y	339m SW	Electricity Substation	1970	196813
Z	342m NE	Electricity Substation	1993	189768
Z	347m NE	Electricity Substation	1979 - 1986	203775
AA	350m SE	Electricity Substation	1988	205907
AA	371m SE	Electricity Substation	1988 - 1997	205702
U	407m S	Electricity Substation	1988	197849
U	408m S	Electricity Substation	1997	200838
8	414m NW	Electricity Substation	1988 - 1996	197999
U	415m S	Electricity Substation	1979	189772
T	423m N	Electricity Substation	1993 - 1996	205206
U	434m S	Electricity Substation	1968 - 1979	196003
AN	437m W	Electricity Substation	1979 - 1996	209850
U	449m SE	Electricity Substation	1988 - 1997	199059
U	450m SE	Electricity Substation	1988	204914
AK	478m N	Electricity Depot	1972	191558
AO	481m SE	Electricity Substation	1968 - 1988	203067

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	**1**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
F	152m N	Filling Station	1979	3336

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	**38**

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
A	41m NE	Garage	1956 - 1971	65429
A	41m NE	Garage	1957 - 1958	64369
C	128m W	Garage	1957 - 1969	65271
C	128m W	Garage	1957 - 1958	64825
D	140m NW	Garage	1957	61452
D	141m NW	Garage	1957 - 1958	64717
D	141m NW	Garage	1962 - 1969	65314
F	165m N	Garage	1971	60831
V	321m SW	Garage	1957 - 1962	63734
P	352m E	Garage	1962 - 1968	64285
P	353m E	Garage	1956	61649
P	353m E	Garage	1957 - 1958	64019
AF	375m SE	Garage	1968	60823
AA	375m SE	Garage	1956 - 1962	65299
AA	376m SE	Garage	1968	61172
AA	376m SE	Garage	1957 - 1958	63574
AN	437m W	Garage	1957	62737

ID	Location	Land use	Dates present	Group ID
AN	437m W	Garage	1962	62062
AN	437m W	Garage	1957 - 1958	63801
AI	439m W	Garage	1958	62286
AI	439m W	Garage	1957	62486
AN	440m W	Garage	1957 - 1958	63727
AI	440m W	Garage	1962	61293
AJ	440m N	Garage	1972 - 1989	65303
AN	440m W	Garage	1957 - 1962	63978
AI	441m W	Garage	1957	62373
U	445m SE	Police Garage	1968 - 1979	64628
AJ	454m N	Garage	1956 - 1959	64283
AP	456m W	Garage	1957 - 1958	64847
AP	457m W	Garage	1957 - 1969	63644
AN	465m W	Car Park and Garage	1994	63159
AN	465m W	Car Park and Garage	1986 - 1996	64617
R	467m NW	Garage	1969	60830
AN	468m W	Multistorey Garage and Car Park	1979 - 1993	64353
AN	482m W	Car Park and Garage	1969	62265
AT	483m W	Garage	1986	62866
AT	483m W	Garage	1994 - 1996	65332
AT	483m W	Garage	1988 - 1993	64107

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	**0**

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



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Site Outline

Search buffers in metres (m)

- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical petrol stations
- Historical garages

2.1 Historical industrial land uses

Records within 500m	190

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 28**

ID	Location	Land Use	Date	Group ID
C	112m E	Telegraph House	1971	1883555
E	129m N	Garage	1971	1883648
F	144m N	Railway Sidings	1898	1955038

ID	Location	Land Use	Date	Group ID
F	151m N	Railway Sidings	1962	1908472
H	151m N	Railway Building	1962	1866740
F	154m N	Railway Sidings	1938	1908472
F	155m N	Railway Sidings	1938	1908472
C	162m E	Police Station	1971	1876192
I	164m N	Railway Station	1994	1906538
H	168m N	Garage	1971	1883649
H	170m N	Terminus	1938	1933328
F	171m N	Railway Sidings	1913	1955038
H	174m N	Terminus	1933	1949896
H	177m N	Terminus	1898	1948431
F	178m N	Railway Sidings	1933	1908472
I	181m N	Railway Station	1962	1936088
H	183m N	Terminus	1913	1969032
H	183m N	Terminus	1938	1945798
E	191m NW	Bus Station	1994	1864796
H	211m N	Railway Building	1938	1919647
H	211m N	Railway Building	1913	1957368
L	218m NE	Unspecified Factory	1962	1919036
M	218m N	Railway Sidings	1994	1913684
M	218m N	Railway Sidings	1989	1913684
I	220m N	Railway Station	1898	1906538
I	221m N	Railway Station	1989	1962142
I	221m N	Railway Station	1977	1962142
I	221m N	Railway Station	1971	1962142
M	221m N	Railway Sidings	1977	1908472
M	221m N	Railway Sidings	1971	1908472
I	227m N	Railway Station	1938	1962601

ID	Location	Land Use	Date	Group ID
I	227m N	Railway Station	1913	1937402
I	229m N	Railway Station	1938	1948567
I	233m N	Railway Station	1933	1958834
E	243m NW	Smithy	1913	1875839
F	245m N	Railway Building	1938	1958202
F	245m N	Railway Building	1913	1892409
F	245m N	Railway Building	1938	1929321
1	248m NE	Railway Building	1913	1866731
L	253m NE	Biscuit Factory	1933	1889569
P	255m NE	Railway Building	1938	1866738
P	256m NE	Railway Building	1913	1866739
P	258m NE	Railway Buildings	1938	1856209
P	263m NE	Railway Building	1913	1918602
S	266m NW	Railway Sidings	1933	1905455
P	273m NE	Railway Building	1938	1919982
F	296m N	Railway Sidings	1933	1965409
U	301m N	Railway Works	1898	1968682
M	302m N	Railway Building	1898	1945084
3	303m E	Unspecified Tank	1971	1858410
U	305m N	Unspecified Works	1977	1943410
U	305m N	Unspecified Works	1962	1903310
U	305m N	Unspecified Works	1971	1903310
U	306m N	Railway Works	1913	1932396
U	308m N	Railway Works	1938	1952064
U	308m N	Unspecified Works	1938	1929531
M	309m N	Railway Building	1938	1907514
M	309m N	Railway Building	1913	1967493
W	313m SW	Smithy	1913	1875838

ID	Location	Land Use	Date	Group ID
X	316m S	Brewery	1933	1909883
Y	317m NW	Railway Building	1994	1964573
Y	317m NW	Railway Building	1989	1964573
Y	317m NW	Railway Building	1977	1901767
X	317m S	Brewery	1938	1887421
X	317m S	Brewery	1913	1939065
X	317m S	Unspecified Commercial/Industrial	1898	1874675
V	318m S	Unspecified Tanks	1977	1888600
V	318m S	Unspecified Tanks	1971	1947112
P	319m NE	Railway Building	1898	1904464
I	319m N	Railway Building	1898	1866756
X	319m S	Brewery	1977	1899772
X	319m S	Brewery	1971	1893062
X	320m S	Brewery	1938	1954219
AA	322m N	Unspecified Works	1933	1929531
P	323m NE	Railway Building	1913	1956328
P	323m NE	Railway Building	1938	1941121
V	330m S	Unspecified Tank	1898	1858411
V	331m S	Unspecified Tank	1913	1961041
V	331m S	Unspecified Tank	1898	1914554
F	332m NE	Railway Building	1994	1904291
F	332m NE	Railway Building	1989	1904291
F	340m NE	Railway Building	1933	1893308
L	342m E	Unspecified Heap	1933	1869773
V	342m S	Unspecified Mill	1898	1872613
L	347m NE	Railway Building	1938	1935030
L	347m NE	Railway Building	1913	1886365
AD	349m N	Railway Building	1994	1902104

ID	Location	Land Use	Date	Group ID
AD	349m N	Railway Building	1989	1902104
AD	349m N	Railway Building	1977	1923638
AD	349m N	Railway Building	1971	1956131
4	355m N	Railway Building	1933	1866804
V	355m SE	Unspecified Depot	1994	1895129
V	355m SE	Unspecified Depot	1989	1895129
V	355m SE	Unspecified Depot	1977	1945841
L	364m NE	Railway Building	1962	1945924
AE	365m NE	Unspecified Depot	1994	1923361
AE	365m NE	Unspecified Depot	1989	1923361
AF	365m S	Brewery	1977	1891852
AF	365m S	Brewery	1971	1886356
L	365m NE	Railway Building	1898	1919754
AB	367m SE	Unspecified Wharf	1994	1908537
V	369m S	Unspecified Commercial/Industrial	1933	1874677
AB	369m SE	Unspecified Wharf	1938	1897348
AG	371m N	Railway Building	1933	1866803
L	371m NE	Engine Shed	1913	1944047
L	371m NE	Engine Shed	1938	1912434
F	374m NE	Railway Building	1962	1946921
F	374m NE	Railway Building	1971	1946921
L	374m NE	Engine Shed	1938	1912434
AB	375m SE	Unspecified Wharf	1938	1889621
AB	375m SE	Unspecified Wharf	1938	1889621
L	376m NE	Engine Shed	1933	1942641
L	377m E	Railway Buildings	1898	1856210
AG	377m N	Railway Building	1933	1866802
F	378m NE	Railway Building	1938	1899828

ID	Location	Land Use	Date	Group ID
L	379m E	Railway Building	1962	1893606
L	380m NE	Railway Building	1898	1866737
L	381m E	Goods Sheds	1913	1946019
L	382m E	Railway Building	1898	1942045
F	384m NE	Railway Building	1933	1898347
L	386m E	Goods Sheds	1913	1897218
L	386m E	Goods Sheds	1938	1944696
L	389m E	Goods Sheds	1938	1940218
L	389m E	Goods Sheds	1933	1944696
V	396m S	Railway Sidings	1933	1883121
AI	398m E	Sawmills	1938	1923179
AI	398m E	Sawmills	1913	1963654
AI	398m E	Sawmills	1898	1885573
AI	401m E	Sawmill	1938	1884813
AB	401m SE	Smithy	1913	1875836
AI	402m E	Sawmills	1933	1964023
L	412m E	Goods Sheds	1938	1904868
V	416m SE	Unspecified Factory	1977	1914345
L	417m E	Goods Sheds	1913	1934127
AL	421m N	Iron Works	1910	1942788
V	422m SE	Unspecified Factory	1971	1942763
AM	427m N	Electric Works	1910	1940165
AN	432m NE	Railway Building	1898	1893126
L	433m E	Railway Building	1962	1946643
AN	435m NE	Railway Building	1962	1968283
AN	435m NE	Railway Building	1971	1968283
L	437m E	Railway Building	1898	1888446
AN	438m NE	Goods Shed	1938	1887654

ID	Location	Land Use	Date	Group ID
AN	438m NE	Goods Shed	1977	1891848
AN	438m NE	Goods Shed	1913	1897099
AB	441m SE	Unspecified Disused Wharf	1933	1884613
L	441m E	Goods Sheds	1913	1946450
AN	442m NE	Goods Shed	1938	1903372
AN	444m NE	Goods Shed	1933	1897844
AQ	444m N	Railway Sidings	1900	1955038
5	444m W	Unspecified Depot	1977	1862097
S	445m NW	Railway Building	1913	1866755
AB	445m SE	Unspecified Wharf	1989	1908537
6	446m NE	Boat Houses	1898	1864324
AQ	446m N	Railway Sidings	1900	1955038
AR	448m N	Railway Sidings	1900	1955038
AL	449m N	Iron Works	1900	1917225
AR	460m N	Railway Sidings	1897	1955038
AR	463m N	Railway Sidings	1938	1947411
AR	463m N	Railway Sidings	1910	1953560
AL	463m N	Iron Works	1897	1908602
S	464m NW	Railway Building	1898	1866754
AN	466m NE	Railway Buildings	1994	1940197
AN	466m NE	Railway Buildings	1989	1940197
7	466m SW	Unspecified Commercial/Industrial	1933	1874676
AL	473m N	Railway Sidings	1901	1887263
8	475m NE	Boat Houses	1898	1864323
AU	478m E	Railway Building	1898	1866732
AM	480m N	Electric Works	1897	1940569
AM	481m N	Unspecified Depot	1994	1914143
AM	481m N	Unspecified Depot	1989	1914143

ID	Location	Land Use	Date	Group ID
AI	481m E	Sawmills	1938	1888823
AI	481m E	Sawmills	1913	1935248
AI	481m E	Sawmills	1898	1938964
AU	483m NE	Railway Building	1938	1926873
AU	483m NE	Railway Building	1913	1910415
9	485m E	Goods Sheds	1938	1887299
AM	486m N	Electric Works	1900	1940569
AB	489m SE	Unspecified Wharf	1938	1946894
AB	489m SE	Unspecified Wharf	1938	1946894
AX	490m NW	Fire Station	1994	1957033
AX	490m NW	Fire Station	1989	1957033
AX	490m NW	Fire Station	1977	1957046
AX	490m NW	Fire Station	1962	1898729
AX	490m NW	Fire Station	1971	1898729
AB	490m SE	Unspecified Wharf	1938	1946894
AY	492m SW	Police Station	1994	1911315
AY	492m SW	Police Station	1989	1911315
AY	492m SW	Police Station	1977	1918131
10	500m NE	Boat House	1913	1867416

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**116**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 28**

ID	Location	Land Use	Date	Group ID
E	159m NW	Tank or Trough	1879	327920

ID	Location	Land Use	Date	Group ID
E	159m NW	Tank or Trough	1879	326647
E	159m NW	Tank or Trough	1879	312006
H	165m N	Unspecified Tank	1988	305886
J	178m SE	Tank or Trough	1879	324141
J	178m SE	Tank or Trough	1879	317342
K	182m E	Pump and Tank	1879	318353
K	182m E	Pump and Tank	1879	323519
E	241m NW	Unspecified Tank	1969	305869
P	255m NE	Unspecified Tank	1931	320425
P	256m NE	Unspecified Tank	1962	315975
P	256m NE	Unspecified Tank	1956	315975
P	256m NE	Unspecified Tank	1957	325161
P	256m NE	Unspecified Tank	1958	325161
N	279m S	Tanks	1879	324380
N	279m S	Tanks	1879	323161
2	286m SW	Unspecified Tank	1931	305870
T	288m W	Unspecified Tank	1879	312605
T	289m W	Unspecified Tank	1879	312605
T	290m W	Unspecified Tank	1912	315638
T	291m W	Unspecified Tank	1900	322205
Q	304m E	Unspecified Tank	1997	327438
Q	304m E	Unspecified Tank	1988	327438
V	308m S	Gas Works	1879	313448
V	308m S	Gas Works	1879	313448
V	309m S	Gas Works	1879	319202
V	310m S	Gas Works	1900	313448
V	310m S	Gas Works	1912	313448
M	313m N	Unspecified Tank	1879	305888

ID	Location	Land Use	Date	Group ID
V	318m S	Tanks	1979	325975
V	318m S	Tanks	1968	325975
V	324m S	Tanks	1956	317508
V	324m S	Tanks	1962	319738
V	324m S	Tanks	1957	316943
V	324m S	Tanks	1958	316943
F	325m NE	Unspecified Tank	1931	313443
F	325m NE	Unspecified Tank	1912	313443
F	326m NE	Unspecified Tank	1962	317418
F	326m NE	Unspecified Tank	1956	317418
F	327m NE	Unspecified Tank	1957	317418
F	327m NE	Unspecified Tank	1958	317418
V	327m S	Gasometer	1879	321935
V	327m S	Gasometer	1879	321935
V	328m S	Gasometer	1879	315866
V	329m S	Gasometer	1879	319443
V	329m S	Gasometer	1879	327004
V	329m S	Gasometer	1900	321837
V	330m S	Gasometer	1879	313486
V	330m S	Gasometer	1900	325036
V	330m S	Gasometer	1912	325036
V	335m S	Tanks	1957	326154
V	335m S	Tanks	1958	326154
V	335m S	Tanks	1979	326154
V	336m S	Tanks	1962	326154
V	336m S	Tanks	1956	326154
V	336m S	Tanks	1968	326154
V	347m S	Tanks	1979	325205

ID	Location	Land Use	Date	Group ID
V	348m S	Tanks	1962	324934
V	348m S	Tanks	1968	324934
V	350m S	Unspecified Tank	1956	312932
V	351m S	Unspecified Tank	1957	312932
V	351m S	Unspecified Tank	1958	312932
L	356m E	Tank or Trough	1879	324468
L	356m E	Tank or Trough	1879	314196
L	358m E	Tank or Trough	1879	312007
Q	358m E	Unspecified Tank	1997	320575
Q	359m E	Unspecified Tank	1988	314358
Q	359m E	Unspecified Tank	1968	314358
Q	359m E	Unspecified Tank	1979	314358
Q	359m E	Unspecified Tank	1988	314358
AH	387m S	Unspecified Tank	1980	314799
AH	387m S	Unspecified Tank	1970	314799
AC	390m NW	Tank or Trough	1879	324092
AC	390m NW	Tank or Trough	1879	316845
AC	390m NW	Tank or Trough	1879	316867
AC	390m NW	Tank or Trough	1879	325471
AJ	404m W	Unspecified Tank	1880	314047
AJ	404m W	Unspecified Tank	1880	317232
AJ	408m W	Unspecified Tank	1880	321877
AJ	408m W	Unspecified Tank	1880	318898
AJ	421m W	Tank or Trough	1880	321521
AJ	421m W	Tank or Trough	1880	325799
X	422m S	Tank or Trough	1879	326975
X	422m S	Tank or Trough	1879	325240
X	424m S	Tank or Trough	1879	312010

ID	Location	Land Use	Date	Group ID
AA	427m NW	Tank or Trough	1879	312005
V	430m S	Unspecified Tank	1900	318579
V	431m S	Unspecified Tank	1879	318579
AO	435m SW	Unspecified Tank	1980	328216
AO	435m SW	Unspecified Tank	1970	314248
AO	436m SW	Unspecified Tank	1980	321457
AO	436m SW	Unspecified Tank	1970	321457
AE	437m NE	Unspecified Tank	1971	305887
AE	438m NE	Unspecified Tank	1986	305885
V	459m SE	Unspecified Tank	1968	315496
V	460m SE	Unspecified Tank	1979	315496
AT	473m NW	Tank or Trough	1879	319837
AT	473m NW	Tank or Trough	1879	326269
AT	473m NW	Tank or Trough	1879	312004
AU	479m NE	Unspecified Tank	1900	320456
AU	481m NE	Unspecified Tank	1879	320456
AU	481m NE	Unspecified Tank	1879	320456
AU	482m NE	Unspecified Tank	1962	320456
AU	482m NE	Unspecified Tank	1956	320456
AU	482m NE	Unspecified Tank	1957	320456
AU	482m NE	Unspecified Tank	1958	320456
AU	483m NE	Unspecified Tank	1879	320456
AU	484m NE	Unspecified Tank	1912	313045
AU	484m NE	Unspecified Tank	1931	313045
AW	484m SE	Unspecified Tank	1956	316764
AW	485m SE	Unspecified Tank	1957	314354
AW	485m SE	Unspecified Tank	1958	314354
AV	491m W	Pump and Tank	1880	313632

ID	Location	Land Use	Date	Group ID
AV	491m W	Pump and Tank	1880	317922
AL	494m N	Unspecified Tank	1972	320796
AL	494m N	Unspecified Tank	1989	320796

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m **113**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 28**

ID	Location	Land Use	Date	Group ID
B	90m SW	Electricity Substation	1986	198092
B	90m SW	Electricity Substation	1994	198092
B	90m SW	Electricity Substation	1996	198092
B	90m SW	Electricity Substation	1969	198092
B	91m SW	Electricity Substation	1979	198092
B	91m SW	Electricity Substation	1988	198092
B	91m SW	Electricity Substation	1993	198092
G	146m W	Electricity Substation	1986	204833
G	146m W	Electricity Substation	1994	204833
G	146m W	Electricity Substation	1996	204833
C	147m E	Electricity Substation	1979	201683
C	147m E	Electricity Substation	1988	201683
C	147m E	Electricity Substation	1988	201683
C	147m E	Electricity Substation	1993	201683
C	148m E	Electricity Substation	1971	201683
G	148m W	Electricity Substation	1988	204833
G	148m W	Electricity Substation	1993	204833

ID	Location	Land Use	Date	Group ID
C	148m E	Electricity Substation	1986	201683
H	163m N	Electricity Substation	1986	201931
H	163m N	Electricity Substation	1979	200623
H	163m N	Electricity Substation	1971	200623
K	190m E	Electricity Substation	1979	196184
K	190m E	Electricity Substation	1988	196184
K	190m E	Electricity Substation	1988	196184
K	191m E	Electricity Substation	1993	196184
K	191m E	Electricity Substation	1986	196184
N	232m S	Electricity Substation	1997	203216
N	232m S	Electricity Substation	1979	203216
N	232m S	Electricity Substation	1988	203216
N	232m S	Electricity Substation	1988	203216
N	232m S	Electricity Substation	1968	203216
O	236m W	Electricity Substation	1986	207537
O	237m W	Electricity Substation	1969	192596
O	237m W	Electricity Substation	1979	211699
O	237m W	Electricity Substation	1988	211699
O	237m W	Electricity Substation	1993	211699
O	237m W	Electricity Substation	1994	207537
O	237m W	Electricity Substation	1996	207537
O	239m W	Electricity Substation	1994	200407
O	239m W	Electricity Substation	1996	200407
O	241m W	Electricity Substation	1993	206172
Q	261m SE	Electricity Substation	1988	205643
Q	262m SE	Electricity Substation	1997	208569
Q	262m SE	Electricity Substation	1988	208569
R	263m W	Electricity Substation	1969	189830

ID	Location	Land Use	Date	Group ID
R	269m W	Electricity Substation	1986	204349
R	270m W	Electricity Substation	1979	204406
R	270m W	Electricity Substation	1988	204406
R	270m W	Electricity Substation	1993	204406
R	272m W	Electricity Substation	1994	209780
R	272m W	Electricity Substation	1996	209780
P	300m NE	Electricity Substation	1971	189767
V	308m S	Gas Works	1879	196480
V	308m S	Gas Works	1879	196480
V	309m S	Gas Works	1879	209480
V	310m S	Gas Works	1900	196480
V	310m S	Gas Works	1912	196480
Z	317m SW	Electricity Substation	1980	209601
Z	319m SW	Electricity Substation	1988	209601
V	321m S	Electricity Substation	1979	197972
V	321m S	Electricity Substation	1968	197972
Q	326m SE	Electricity Substation	1997	201449
V	327m S	Gasometer	1879	203796
V	327m S	Gasometer	1879	203796
V	328m S	Gasometer	1879	203796
Q	329m SE	Electricity Substation	1988	193961
V	329m S	Gasometer	1879	199598
V	329m S	Gasometer	1879	201799
V	329m S	Gasometer	1900	208605
V	330m S	Gasometer	1879	199598
Q	330m SE	Electricity Substation	1988	207739
V	330m S	Gasometer	1900	199598
V	330m S	Gasometer	1912	199598

ID	Location	Land Use	Date	Group ID
AB	333m SE	Electricity Substation	1988	200145
AB	333m SE	Electricity Substation	1997	200145
Q	339m SE	Electricity Substation	1968	195554
AC	339m NW	Electricity Substation	1994	203574
AC	339m NW	Electricity Substation	1996	203574
AC	339m NW	Electricity Substation	1993	203574
Q	339m SE	Electricity Substation	1979	195554
Z	339m SW	Electricity Substation	1970	196813
F	342m NE	Electricity Substation	1993	189768
F	347m NE	Electricity Substation	1979	203775
F	347m NE	Electricity Substation	1986	203775
AB	350m SE	Electricity Substation	1988	205907
AB	371m SE	Electricity Substation	1988	205702
AB	371m SE	Electricity Substation	1997	205702
V	407m S	Electricity Substation	1988	197849
V	408m S	Electricity Substation	1997	200838
V	409m S	Electricity Substation	1988	197849
AK	414m NW	Electricity Substation	1994	197999
AK	414m NW	Electricity Substation	1996	197999
AK	414m NW	Electricity Substation	1988	197999
AK	414m NW	Electricity Substation	1993	197999
V	415m S	Electricity Substation	1979	189772
U	423m N	Electricity Substation	1993	205206
U	424m N	Electricity Substation	1994	205206
U	424m N	Electricity Substation	1996	205206
V	434m S	Electricity Substation	1979	196003
V	435m S	Electricity Substation	1968	196003
AP	437m W	Electricity Substation	1994	209850

ID	Location	Land Use	Date	Group ID
AP	437m W	Electricity Substation	1996	209850
AP	438m W	Electricity Substation	1979	209850
AP	438m W	Electricity Substation	1988	209850
AP	438m W	Electricity Substation	1993	209850
AP	438m W	Electricity Substation	1986	209850
V	449m SE	Electricity Substation	1988	199059
V	450m SE	Electricity Substation	1988	204914
V	451m SE	Electricity Substation	1997	199059
AM	478m N	Electricity Depot	1972	191558
AB	481m SE	Electricity Substation	1979	203067
AB	481m SE	Electricity Substation	1988	203067
AB	481m SE	Electricity Substation	1968	203067

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	**1**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 28**

ID	Location	Land Use	Date	Group ID
H	152m N	Filling Station	1979	3336

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	**68**

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 28**

ID	Location	Land Use	Date	Group ID
A	41m NE	Garage	1962	65429
A	41m NE	Garage	1956	65429
A	41m NE	Garage	1971	65429
A	41m NE	Garage	1957	64369
A	41m NE	Garage	1958	64369
D	128m W	Garage	1962	65271
D	128m W	Garage	1957	65271
D	128m W	Garage	1969	65271
D	128m W	Garage	1957	64825
D	128m W	Garage	1958	64825
E	140m NW	Garage	1957	61452
E	141m NW	Garage	1957	64717
E	141m NW	Garage	1958	64717
E	141m NW	Garage	1962	65314
E	141m NW	Garage	1969	65314
H	165m N	Garage	1971	60831
W	321m SW	Garage	1957	63734
W	321m SW	Garage	1958	63734
W	321m SW	Garage	1957	63734
W	321m SW	Garage	1962	63734
Q	352m E	Garage	1962	64285
Q	353m E	Garage	1968	64285
Q	353m E	Garage	1957	64019
Q	353m E	Garage	1958	64019
Q	353m E	Garage	1956	61649
AB	375m SE	Garage	1968	60823
AB	375m SE	Garage	1962	65299

ID	Location	Land Use	Date	Group ID
AB	375m SE	Garage	1956	65299
AB	376m SE	Garage	1957	63574
AB	376m SE	Garage	1958	63574
AB	376m SE	Garage	1968	61172
AP	437m W	Garage	1957	62737
AP	437m W	Garage	1962	62062
AP	437m W	Garage	1957	63801
AP	437m W	Garage	1958	63801
AJ	439m W	Garage	1958	62286
AJ	439m W	Garage	1957	62486
AP	440m W	Garage	1957	63727
AP	440m W	Garage	1958	63727
AJ	440m W	Garage	1962	61293
AL	440m N	Garage	1972	65303
AP	440m W	Garage	1962	63978
AP	440m W	Garage	1957	63978
AJ	441m W	Garage	1957	62373
AL	443m N	Garage	1989	65303
V	445m SE	Police Garage	1968	64628
V	445m SE	Police Garage	1979	64628
AL	454m N	Garage	1956	64283
AL	454m N	Garage	1959	64283
AL	455m N	Garage	1956	64283
AS	456m W	Garage	1957	64847
AS	456m W	Garage	1958	64847
AS	457m W	Garage	1962	63644
AS	457m W	Garage	1957	63644
AS	457m W	Garage	1969	63644

ID	Location	Land Use	Date	Group ID
AP	465m W	Car Park and Garage	1994	63159
AP	465m W	Car Park and Garage	1996	64617
S	467m NW	Garage	1969	60830
AP	468m W	Multistorey Garage and Car Park	1988	64353
AP	468m W	Multistorey Garage and Car Park	1993	64353
AP	468m W	Multistorey Garage and Car Park	1979	64353
AP	468m W	Car Park and Garage	1986	64617
AP	482m W	Car Park and Garage	1969	62265
AV	483m W	Garage	1986	62866
AV	483m W	Garage	1994	65332
AV	483m W	Garage	1996	65332
AV	483m W	Garage	1988	64107
AV	483m W	Garage	1993	64107

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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Site Outline

Search buffers in metres (m)

Licensed waste sites

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m	0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m	0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	1

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on **page 48**

ID	Location	Details		
D	439m E	Site Name: Mobile Plant Sr2010 No11 Site Address: Mobilr Plan Correspondence Address: -	Type of Site: Mobile plant treatment for soil 75,000 tpd Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SOU013 EPR reference: EA/EPR/JB3502GX/A001 Operator: Mr Mark Rough Waste Management licence No: 407079 Annual Tonnage: 75000	Issue Date: 10/11/2020 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	20

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 48**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	26m N	15, FRIAR STREET, READING, RG1 1DB	WEX223289	Disposing of waste exemption	Not on a farm	Disposal by incineration
A	26m N	15, FRIAR STREET, READING, RG1 1DB	WEX078089	Disposing of waste exemption	Not on a farm	Disposal by incineration
A	27m N	15 Friar Street Reading Berkshire RG1 1DB	EPR/PE5889AA/A001	Treating waste exemption	Non-Agricultural Waste Only	Sorting and de-naturing of controlled drugs for disposal
1	83m NW	25b Friar Street READING RG1 1DP	EPR/WF0702XY/A001	Treating waste exemption	Non-Agricultural Waste Only	Crushing waste fluorescent tubes
2	236m NE	Apex Plaza Forbury Road Reading Berkshire RG1 1AX	EPR/BF0606LA/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in a secure place
3	265m N	2 Miles either side of Reading Railway Station Station Approach READING RG1 1LZ	EPR/AF0134QF/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
B	309m S	Oracle Shopping Centre The Oracle Centre READING RG1 2AG	EPR/EF0606XT/A001	Treating waste exemption	Non-Agricultural Waste Only	Crushing waste fluorescent tubes
B	311m S	-	WEX230105	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
B	311m S	-	WEX230105	Storing waste exemption	Not on a farm	Storage of waste in a secure place
B	311m S	Oracle Shopping Centre The Oracle Centre READING RG1 2AG	EPR/SE5949EQ/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in a secure place
B	311m S	Oracle Shopping Centre The Oracle Centre READING RG1 2AG	EPR/SE5949EQ/A001	Treating waste exemption	Non-Agricultural Waste Only	Screening and blending of waste

ID	Location	Site	Reference	Category	Sub-Category	Description
4	320m W	All Roads in Berkshire	EPR/ZH0512RR/A001	Treating waste exemption	Non-Agricultural Waste Only	Screening and blending of waste
C	335m SW	-	WEX284323	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
C	335m SW	Centre Management Suite, Broad Street Mall, Broad Street, Reading, RG1 7QE	WEX157193	Treating waste exemption	Not on a Farm	Aerobic composting and associated prior treatment
D	424m E	Galliford Try Forbury Place Reading RG1 3JH	EPR/NF0530NY/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
5	438m SW	CIVIC CENTRE, CASTLE STREET, READING, RG1 7TQ	WEX236540	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
E	460m NE	CLEARWATER COURT, VASTERN ROAD, READING, RG1 8DB	WEX142959	Storing waste exemption	On a farm	Storage of sludge
E	460m NE	CLEARWATER COURT, VASTERN ROAD, READING, RG1 8DB	WEX085030	Treating waste exemption	Not on a farm	Recovery of waste at a waste water treatment works
E	466m NE	-	EPR/VE5088BG/A001	Treating waste exemption	Non-Agricultural Waste Only	Recovery of waste at a waste water treatment works
6	493m NE	Kings Meadow House Kings Meadow Road READING RG1 8DQ	EPR/JF0436AN/A001	Treating waste exemption	Non-Agricultural Waste Only	Crushing waste fluorescent tubes

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use



4.1 Recent industrial land uses

Records within 250m	23

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 52**

ID	Location	Company	Address	Activity	Category
1	11m SW	Leightons Hearing Care	12-14, Queen Victoria Street, Reading, Berkshire, RG1 1TG	Disability and Mobility Equipment	Consumer Products
2	59m N	Harris Arcade Phones	7, Harris Arcade, Reading, Berkshire, RG1 1DN	Electrical Equipment Repair and Servicing	Repair and Servicing

ID	Location	Company	Address	Activity	Category
3	65m NE	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
4	75m NW	London Camera Exchange	7, Station Road, Reading, Berkshire, RG1 1LG	Photographic and Optical Equipment	Household, Office, Leisure and Garden
A	91m SW	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
A	91m SW	Specsavers Hearcare	40, Broad Street, Reading, Berkshire, RG1 2AA	Disability and Mobility Equipment	Consumer Products
A	110m W	Sanbei Phoneshop	14, Union Street, Reading, Berkshire, RG1 1EU	Radar and Telecommunications Equipment	Industrial Products
B	111m N	Intercaraba o Ltd	Aquis House 49-51, Blagrave Street, Reading, Berkshire, RG1 1PL	Distribution and Haulage	Transport, Storage and Delivery
A	111m W	A & Z Mobiles UK Ltd	17, Union Street, Reading, Berkshire, RG1 1EU	Electrical Equipment Repair and Servicing	Repair and Servicing
A	113m W	Superior Phone	12, Union Street, Reading, Berkshire, RG1 1EU	Radar and Telecommunications Equipment	Industrial Products
B	123m NE	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
5	150m E	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
A	156m W	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
6	191m N	Assisted Travel Lounge	3 Brunel Arcade, Station Approach, Reading, Berkshire, RG1 1LT	Disability and Mobility Equipment	Consumer Products
C	191m E	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
D	210m S	carvalet.co. uk	41, Minster Street, Reading, Berkshire, RG1 2JB	Vehicle Cleaning Services	Personal, Consumer and Other Services
D	212m S	Telephone Exchange	Berkshire, RG1	Telecommunications Features	Infrastructure and Facilities
7	231m SE	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
E	236m NE	Logoplaste	Apex Plaza, Forbury Road, Reading, Berkshire, RG1 1AX	Rubber, Silicones and Plastics	Industrial Products
E	236m NE	Apex Plaza	Forbury Road, Reading, Berkshire, RG1 1AX	Business Parks and Industrial Estates	Industrial Features
D	238m S	Boots Hearing Care	Minster Court, Minster Street, Reading, Berkshire, RG1 2JF	Disability and Mobility Equipment	Consumer Products
F	241m W	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
F	241m W	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m	0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m	18

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 52**

ID	Location	Address	Details	
C	163m E	FACTORY PREMISES, KINGS ROAD, READI, FACTORY PREMISES KINGS ROAD RE, ADING BERKS	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0294 Permit Version: 1 Receiving Water: R KENNET	Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964 Effective Date: 12/02/1964 Revocation Date: 04/02/1986
8	256m S	17/23 KING STREET, READING, BERKSHI, 17/23 KING STREET READING BERK, SHIRE	Effluent Type: MISCELLANEOUS DISCHARGES - UNSPECIFIED Permit Number: CTWC.3315 Permit Version: 1 Receiving Water: HOLY BROOK	Status: REVOKED - UNSPECIFIED Issue date: 12/06/1989 Effective Date: 12/06/1989 Revocation Date: 27/06/1991

ID	Location	Address	Details	
G	354m S	THE BREWERY, READING, BERKS, THE BREWERY READING BERKS	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCR.0211 Permit Version: 1 Receiving Water: KENNET	Status: REVOKED - UNSPECIFIED Issue date: 19/12/1955 Effective Date: 19/12/1955 Revocation Date: 12/06/1990
H	357m SE	PREMISES, KINGS RD, READING, BERKS, PREMISES KINGS RD READING BER, KS	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0295 Permit Version: 1 Receiving Water: R KENNET	Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964 Effective Date: 12/02/1964 Revocation Date: 04/02/1986
H	357m SE	PREMISES, KINGS RD, READING, BERKS, PREMISES KINGS RD READING BER, KS	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0296 Permit Version: 1 Receiving Water: R KENNET	Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964 Effective Date: 12/02/1964 Revocation Date: 04/02/1986
H	357m SE	PREMISES, KINGS RD, READING, BERKS, PREMISES KINGS RD READING BER, KS	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0297 Permit Version: 1 Receiving Water: R KENNET	Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964 Effective Date: 12/02/1964 Revocation Date: 04/02/1986
H	357m SE	PREMISES, KINGS RD, READING, BERKS, PREMISES KINGS RD READING BER, KS	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0298 Permit Version: 1 Receiving Water: R KENNET	Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964 Effective Date: 12/02/1964 Revocation Date: 04/02/1986
H	357m SE	PREMISES, KINGS RD, READING, BERKS, PREMISES KINGS RD READING BER, KS	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0299 Permit Version: 1 Receiving Water: R KENNET	Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964 Effective Date: 12/02/1964 Revocation Date: 04/02/1986
H	357m SE	FACTORY AT READING, BERKS, FACTORY AT READING BERKS	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCR.0508 Permit Version: 1 Receiving Water: KENNET	Status: REVOKED - UNSPECIFIED Issue date: 22/03/1962 Effective Date: 22/03/1962 Revocation Date: 03/04/1987
I	358m NE	METROPOLITAN WATER BOARD (NOW THAM, METROPOLITAN WATER BOARD (NOW T, HAMES WATER - CENTRAL)	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - WATER COMPANY (WTW) Permit Number: CTCP.0445 Permit Version: 1 Receiving Water: THAMES	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 16/11/1964 Effective Date: 16/11/1964 Revocation Date: 15/12/1998

ID	Location	Address	Details	
I	358m NE	METROPOLITAN WATER BOARD (NOW THAM, METROPOLITAN WATER BOARD (NOW T, HAMES WATER - CENTRAL)	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - WATER COMPANY (WTW) Permit Number: CTCP.0446 Permit Version: 1 Receiving Water: THAMES	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 16/11/1964 Effective Date: 16/11/1964 Revocation Date: 15/12/1998
J	389m E	DEWATERING WORKS SERV KINGS HOUSE, KINGS HOUSE, 33 KINGS ROAD, READING, BERKSHIRE, RG1 3BU	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: EPRDB3097AL Permit Version: 1 Receiving Water: HOLY BROOK	Status: SURRENDERED UNDER EPR 2010 Issue date: 07/10/2015 Effective Date: 07/10/2015 Revocation Date: 21/02/2017
J	408m E	ABBEY GARDENS, PHASE 1, READING, BE, ABBEY GARDENS PHASE 1 READING, BERKS	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0662 Permit Version: 1 Receiving Water: THE HOLY BROOK	Status: REVOKED - UNSPECIFIED Issue date: 11/02/1986 Effective Date: 11/02/1986 Revocation Date: 19/03/1991
J	417m E	THE ABBEY GARDENS DEVELOPMENT, PHAS, THE ABBEY GARDENS DEVELOPMENT P, HASE II READING BERKS	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0563 Permit Version: 1 Receiving Water: HOLY BROOK	Status: REVOKED - UNSPECIFIED Issue date: 20/01/1986 Effective Date: 20/01/1986 Revocation Date: 05/09/1997
J	417m E	THE ABBEY GARDENS DEVELOPMENT, PHAS, THE ABBEY GARDENS DEVELOPMENT P, HASE II READING BERKS	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0564 Permit Version: 1 Receiving Water: HOLY BROOK	Status: REVOKED - UNSPECIFIED Issue date: 20/01/1986 Effective Date: 20/01/1986 Revocation Date: 11/07/1997
K	435m N	NUGENT HOUSE, VASTERN ROAD, READING, BERKSHIRE, RG1 8DB	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: CAWM.0103 Permit Version: 1 Receiving Water: TO THE VASTERN DITCH	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 06/12/1999 Effective Date: 15/10/1999 Revocation Date: 14/12/1999
K	435m N	NUGENT HOUSE, VASTERN ROAD, READING, BERKSHIRE, RG1 8DB	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: CAWM.0103 Permit Version: 2 Receiving Water: TO THE VASTERN DITCH	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 06/12/1999 Effective Date: 15/12/1999 Revocation Date: 29/02/2000
J	488m E	ABBEY GARDEN DEVELOPMENT, PHASE III, ABBEY GARDEN DEVELOPMENT PHASE, III READING BERKS	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.2738 Permit Version: 1 Receiving Water: RIVER KENNET	Status: REVOKED - UNSPECIFIED Issue date: 15/08/1988 Effective Date: 15/08/1988 Revocation Date: 25/02/1991

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m	15

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 52**

ID	Location	Details	
9	290m N	Incident Date: 14/05/2003 Incident Identification: 158358 Pollutant: Oils and Fuel Pollutant Description: Other Oil or Fuel	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
10	303m SE	Incident Date: 28/06/2005 Incident Identification: 324802 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
11	309m NW	Incident Date: 26/04/2002 Incident Identification: 74851 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
12	345m SW	Incident Date: 05/01/2002 Incident Identification: 50702 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	349m S	Incident Date: 19/08/2001 Incident Identification: 25215 Pollutant: Organic Chemicals/Products Pollutant Description: Hydrocarbons	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	371m S	Incident Date: 04/10/2001 Incident Identification: 34522 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	371m S	Incident Date: 04/10/2001 Incident Identification: 34522 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
J	375m E	Incident Date: 15/07/2002 Incident Identification: 91618 Pollutant: Specific Waste Materials Pollutant Description: Other Specific Waste Material	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
H	389m SE	Incident Date: 18/06/2003 Incident Identification: 166999 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
13	408m SE	Incident Date: 11/10/2003 Incident Identification: 195650 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Location	Details	
G	411m S	Incident Date: 17/08/2001 Incident Identification: 24937 Pollutant: Organic Chemicals/Products Pollutant Description: Solvents	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	411m S	Incident Date: 17/08/2001 Incident Identification: 24937 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	411m S	Incident Date: 17/08/2001 Incident Identification: 24937 Pollutant: Organic Chemicals/Products:Pollutant Not Identified Pollutant Description: Solvents:Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
J	447m E	Incident Date: 21/05/2003 Incident Identification: 159849 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
14	497m NW	Incident Date: 12/09/2001 Incident Identification: 42851 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Composted Material	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m	0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

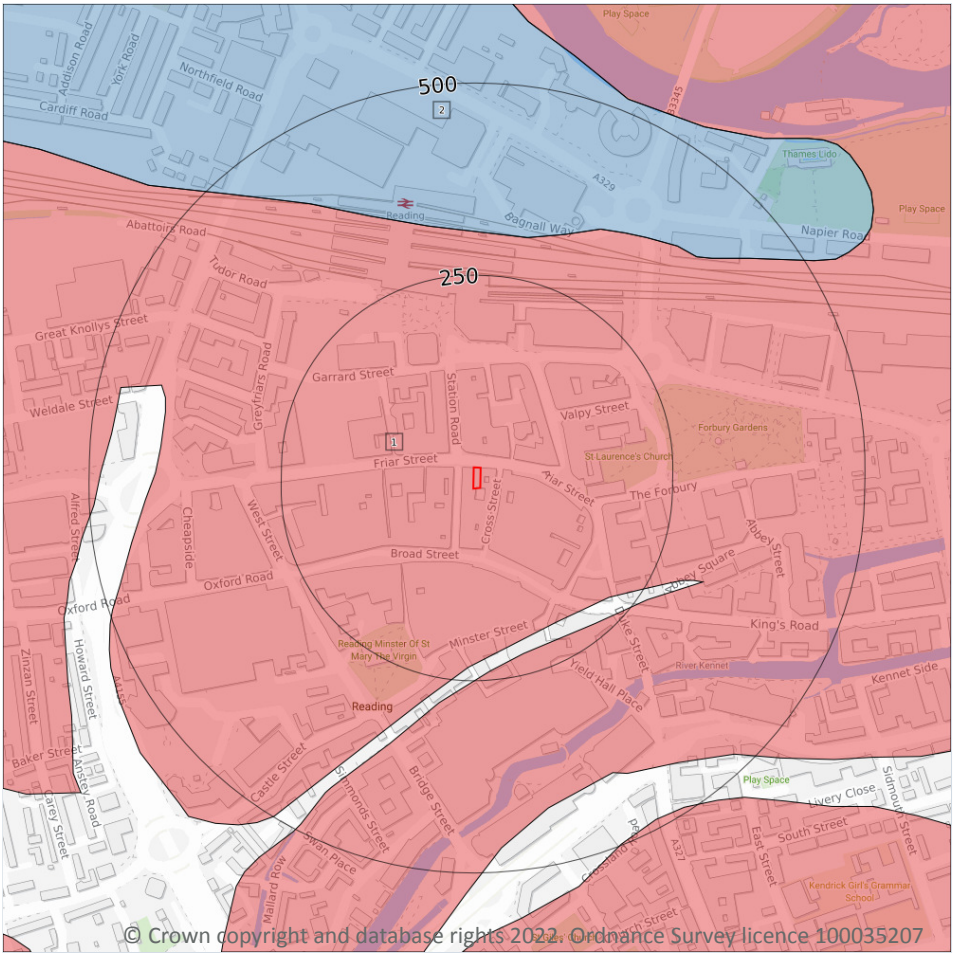
4.21 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



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5.1 Superficial aquifer

Records within 500m	2

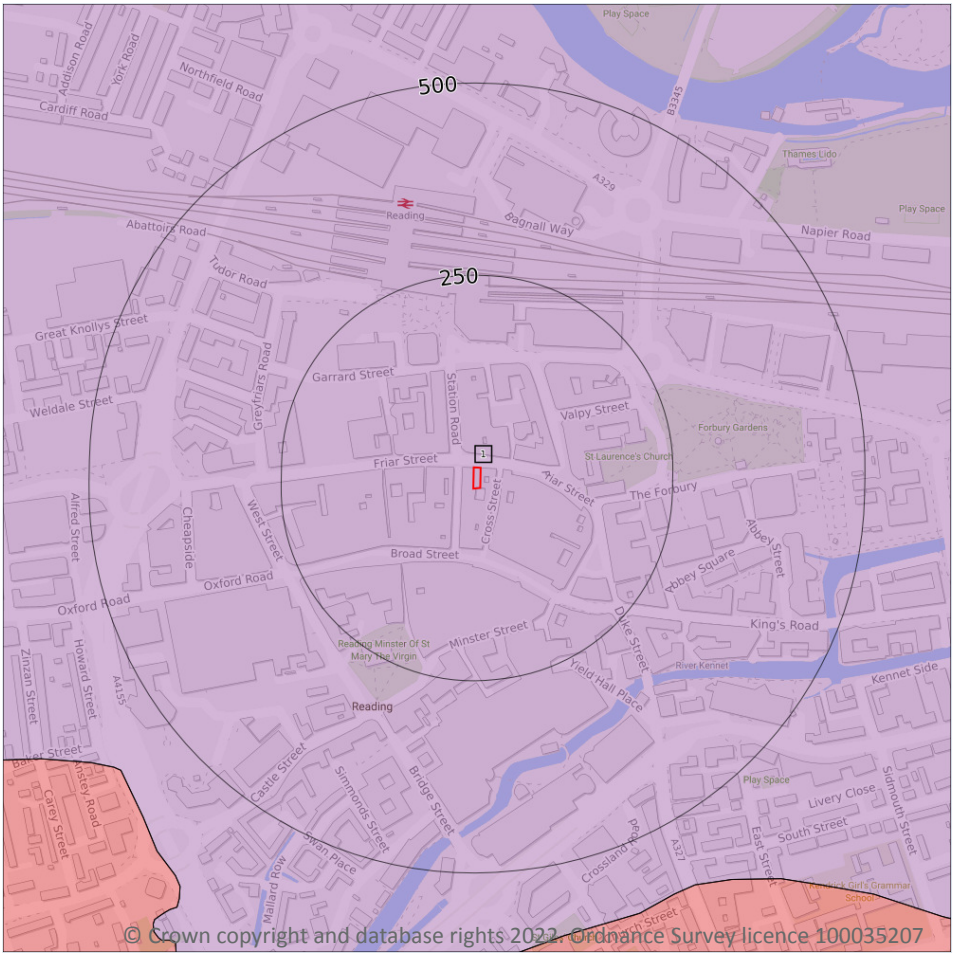
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 63**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	305m N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m	1

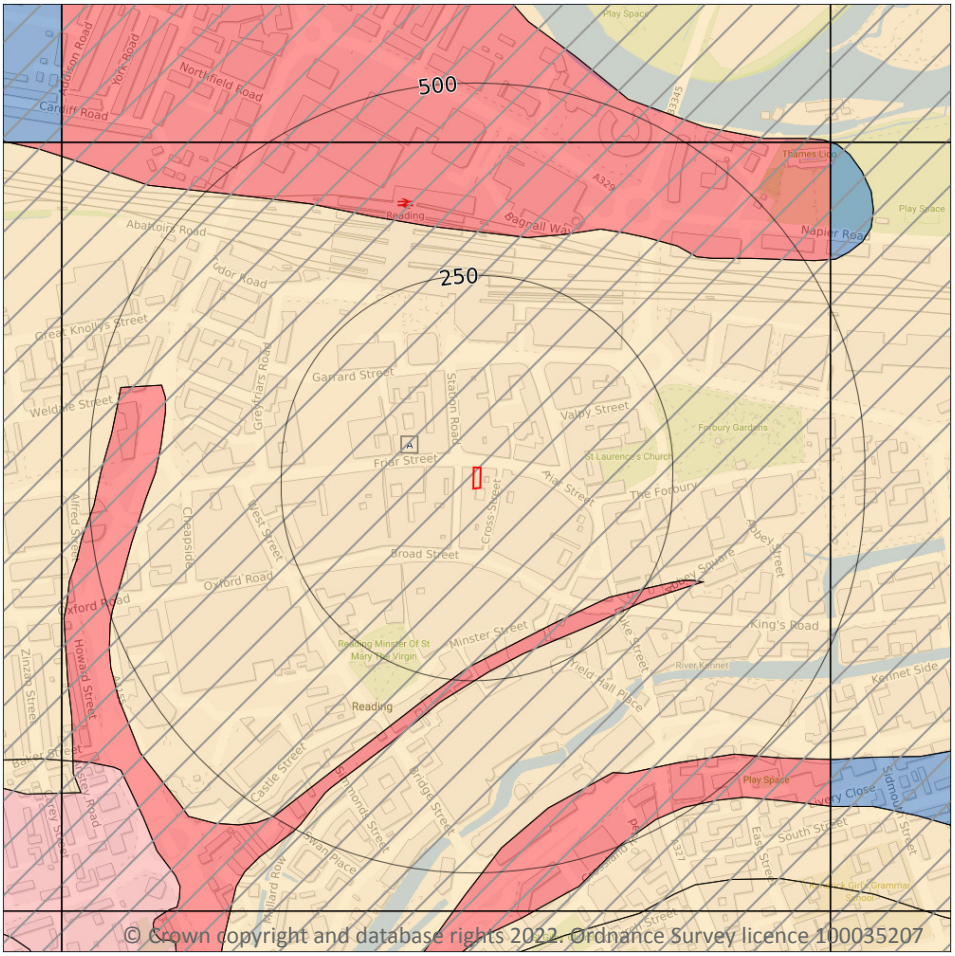
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 64**

ID	Location	Designation	Description
1	**On site**	**Principal**	**Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers**

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m	1

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 65**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
A	**On site**	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: Medium**	**Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures**

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**1**

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
A	**Very significant soluble rocks are likely to be present with a high possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, especially in adverse conditions such as concentrated surface or subsurface water flow.**	**20.0%**

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	**0**

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



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- Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	14

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 67**

ID	Location	Details	
A	339m W	Status: Active Licence No: 28/39/23/0042 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CHEAPSIDE, READING, BERKSHIRE Data Type: Point Name: PRIMARK STORES LIMITED Easting: 471200 Northing: 173500	Annual Volume (m^3): 14,933 Max Daily Volume (m^3): 40.91 Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	823m NW	Status: Historical Licence No: 28/39/23/0041 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING, BERKSHIRE Data Type: Point Name: COX & WYMAN LTD Easting: 470900 Northing: 174100	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/07/1966 Version End Date: -
-	823m NW	Status: Historical Licence No: 28/39/23/0041 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING, BERKSHIRE Data Type: Point Name: COX & WYMAN LTD Easting: 470900 Northing: 174100	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/07/1966 Version End Date: -
-	823m NW	Status: Active Licence No: 28/39/23/0167 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: MEADOW ROAD, READING, BERKSHIRE Data Type: Point Name: MANROSE MANUFACTURING LTD Easting: 470900 Northing: 174100	Annual Volume (m^3): 90,920 Max Daily Volume (m^3): 727.40 Original Application No: - Original Start Date: 23/01/1990 Expiry Date: - Issue No: 101 Version Start Date: 30/06/2006 Version End Date: -
-	823m NW	Status: Active Licence No: 28/39/23/0167 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: MEADOW ROAD, READING, BERKSHIRE Data Type: Point Name: MANROSE MANUFACTURING LTD Easting: 470900 Northing: 174100	Annual Volume (m^3): 90,920 Max Daily Volume (m^3): 727.40 Original Application No: - Original Start Date: 23/01/1990 Expiry Date: - Issue No: 101 Version Start Date: 30/06/2006 Version End Date: -

ID	Location	Details	
-	896m NE	Status: Active Licence No: 28/39/23/0020 Details: Laundry Use Direct Source: THAMES GROUNDWATER Point: 72 GEORGE STREET, CAVERSHAM, - BOREHOLE 'A' Data Type: Point Name: Elis UK Ltd Easting: 471900 Northing: 174400	Annual Volume (m^3): 68,190 Max Daily Volume (m^3): 300.04 Original Application No: NPS/WR/035059 Original Start Date: 09/05/1966 Expiry Date: - Issue No: 103 Version Start Date: 08/02/2021 Version End Date: -
-	1027m NW	Status: Active Licence No: 28/39/23/0128 Details: Process Water Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING POINT B Data Type: Point Name: HILLIER GROUP OF COMPANIES Easting: 470600 Northing: 174000	Annual Volume (m^3): 6,682 Max Daily Volume (m^3): 27.28 Original Application No: WR.A/4547 Original Start Date: 22/01/1975 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	1138m SE	Status: Active Licence No: 28/39/22/0521 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: ROYAL BERKSHIRE HOSPITAL Data Type: Point Name: ROYAL BERKSHIRE HOSPITAL Easting: 472400 Northing: 172800	Annual Volume (m^3): 127,750 Max Daily Volume (m^3): 350 Original Application No: WRA/5950 Original Start Date: 17/01/1992 Expiry Date: - Issue No: 100 Version Start Date: 17/01/1992 Version End Date: -
-	1155m E	Status: Historical Licence No: 28/39/22/0600 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: FORMER GASWORKS, KENAVON DRIVE, READING (5 BOREHOLES) Data Type: Point Name: M J GLEESON GROUP PLC Easting: 472700 Northing: 173600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 31/07/2000 Expiry Date: 31/08/2001 Issue No: 1 Version Start Date: 31/07/2000 Version End Date: -
-	1250m NW	Status: Active Licence No: 28/39/23/0128 Details: Process Water Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING POINT A Data Type: Point Name: HILLIER GROUP OF COMPANIES Easting: 470400 Northing: 174100	Annual Volume (m^3): 6,682 Max Daily Volume (m^3): 27.28 Original Application No: WR.A/4547 Original Start Date: 22/01/1975 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -

ID	Location	Details	
-	1607m NW	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: LITTLE JOHN'S FARM, READING (E) Data Type: Point Name: DRAYTON Easting: 470100 Northing: 174300	Annual Volume (m^3): 9,819 Max Daily Volume (m^3): 26.82 Original Application No: WR.A/3088 Original Start Date: 09/01/1967 Expiry Date: - Issue No: 100 Version Start Date: 09/01/1967 Version End Date: -
-	1763m NW	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: LITTLE JOHN'S FARM, READING (D) Data Type: Point Name: DRAYTON Easting: 470100 Northing: 174600	Annual Volume (m^3): 9,819 Max Daily Volume (m^3): 26.82 Original Application No: WR.A/3088 Original Start Date: 09/01/1967 Expiry Date: - Issue No: 100 Version Start Date: 09/01/1967 Version End Date: -
-	1765m W	Status: Historical Licence No: 28/39/23/0181 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BATTLE HOSPITAL, OXFORD ROAD, READING Data Type: Point Name: WEST BERKSHIRE HEALTH AUTHORITY Easting: 469800 Northing: 173900	Annual Volume (m^3): 136875 Max Daily Volume (m^3): 400 Original Application No: - Original Start Date: 17/01/1992 Expiry Date: - Issue No: 100 Version Start Date: 07/01/1999 Version End Date: -
-	1981m E	Status: Historical Licence No: 28/39/23/0016 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: READING UNIVERSITY RESEARCH SITE, READING, - WELL 'A' Data Type: Point Name: UNIVERSITY OF READING Easting: 473500 Northing: 173900	Annual Volume (m^3): 1136 Max Daily Volume (m^3): 22.73 Original Application No: - Original Start Date: 14/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	**6**

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 67**

ID	Location	Details	
B	403m S	Status: Historical Licence No: 28/39/22/0594 Details: Lake & Pond Throughflow Direct Source: THAMES SURFACE WATER - NON TIDAL Point: THE ORACLE CENTRE, READING Data Type: Point Name: ORACLE SHOPPING CENTRE LTD Easting: 471590 Northing: 173150	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 16/02/2000 Expiry Date: - Issue No: 1 Version Start Date: 16/02/2000 Version End Date: -
B	403m S	Status: Active Licence No: 28/39/22/0594 Details: Lake & Pond Throughflow Direct Source: THAMES SURFACE WATER - NON TIDAL Point: ST.GILES STREAM AT THE ORACLE CENTRE, READING Data Type: Point Name: ORACLE SHOPPING CENTRE LTD Easting: 471590 Northing: 173150	Annual Volume (m^3): 737,856 Max Daily Volume (m^3): 2,016 Original Application No: NPS/WR/033582 Original Start Date: 16/02/2000 Expiry Date: - Issue No: 2 Version Start Date: 09/03/2020 Version End Date: -
-	804m NE	Status: Active Licence No: TH/039/0023/022 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: THAMES SURFACE WATER - NON TIDAL Point: RIVER THAMES AT CAVERSHAM WEIR Data Type: Point Name: Reading Hydro CBS Limited Easting: 472072 Northing: 174185	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: NPS/WR/036037 Original Start Date: 19/02/2016 Expiry Date: 31/03/2028 Issue No: 4 Version Start Date: 16/09/2021 Version End Date: -
-	878m N	Status: Historical Licence No: 28/39/23/0196 Details: Transfer between sources Direct Source: THAMES SURFACE WATER - NON TIDAL Point: THAMES AT CHRISTCHURCH MEADOW Data Type: Point Name: READING BOROUGH COUNCIL Easting: 471440 Northing: 174450	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 12/05/2003 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 12/05/2003 Version End Date: -

ID	Location	Details	
-	878m N	Status: Historical Licence No: 28/39/23/0196 Details: Lake & Pond Throughflow Direct Source: THAMES SURFACE WATER - NON TIDAL Point: THAMES AT CHRISTCHURCH MEADOW Data Type: Point Name: READING BOROUGH COUNCIL Easting: 471440 Northing: 174450	Annual Volume (m^3): 31536 Max Daily Volume (m^3): 86.4 Original Application No: - Original Start Date: 12/05/2003 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 01/04/2006 Version End Date: -
-	878m N	Status: Historical Licence No: 28/39/23/0199/TR Details: Transfer Between Sources (Post Water Act 2003) Direct Source: THAMES SURFACE WATER - NON TIDAL Point: RIVER THAMES - CHRISTCHURCH MEADOWS Data Type: Point Name: READING BOROUGH COUNCIL Easting: 471440 Northing: 174450	Annual Volume (m^3): 1,752,000 Max Daily Volume (m^3): 4800 Original Application No: - Original Start Date: 10/09/2008 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 10/09/2008 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m	**5**

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 67**

ID	Location	Details	
A	339m W	Status: Active Licence No: 28/39/23/0042 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CHEAPSIDE, READING, BERKSHIRE Data Type: Point Name: PRIMARK STORES LIMITED Easting: 471200 Northing: 173500	Annual Volume (m^3): 14,933 Max Daily Volume (m^3): 40.91 Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -

ID	Location	Details	
-	823m NW	Status: Historical Licence No: 28/39/23/0041 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING, BERKSHIRE Data Type: Point Name: COX & WYMAN LTD Easting: 470900 Northing: 174100	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/07/1966 Version End Date: -
-	823m NW	Status: Active Licence No: 28/39/23/0167 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: MEADOW ROAD, READING, BERKSHIRE Data Type: Point Name: MANROSE MANUFACTURING LTD Easting: 470900 Northing: 174100	Annual Volume (m^3): 90,920 Max Daily Volume (m^3): 727.40 Original Application No: - Original Start Date: 23/01/1990 Expiry Date: - Issue No: 101 Version Start Date: 30/06/2006 Version End Date: -
-	1138m SE	Status: Active Licence No: 28/39/22/0521 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: ROYAL BERKSHIRE HOSPITAL Data Type: Point Name: ROYAL BERKSHIRE HOSPITAL Easting: 472400 Northing: 172800	Annual Volume (m^3): 127,750 Max Daily Volume (m^3): 350 Original Application No: WRA/5950 Original Start Date: 17/01/1992 Expiry Date: - Issue No: 100 Version Start Date: 17/01/1992 Version End Date: -
-	1765m W	Status: Historical Licence No: 28/39/23/0181 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BATTLE HOSPITAL, OXFORD ROAD, READING Data Type: Point Name: WEST BERKSHIRE HEALTH AUTHORITY Easting: 469800 Northing: 173900	Annual Volume (m^3): 136875 Max Daily Volume (m^3): 400 Original Application No: - Original Start Date: 17/01/1992 Expiry Date: - Issue No: 100 Version Start Date: 07/01/1999 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m	0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

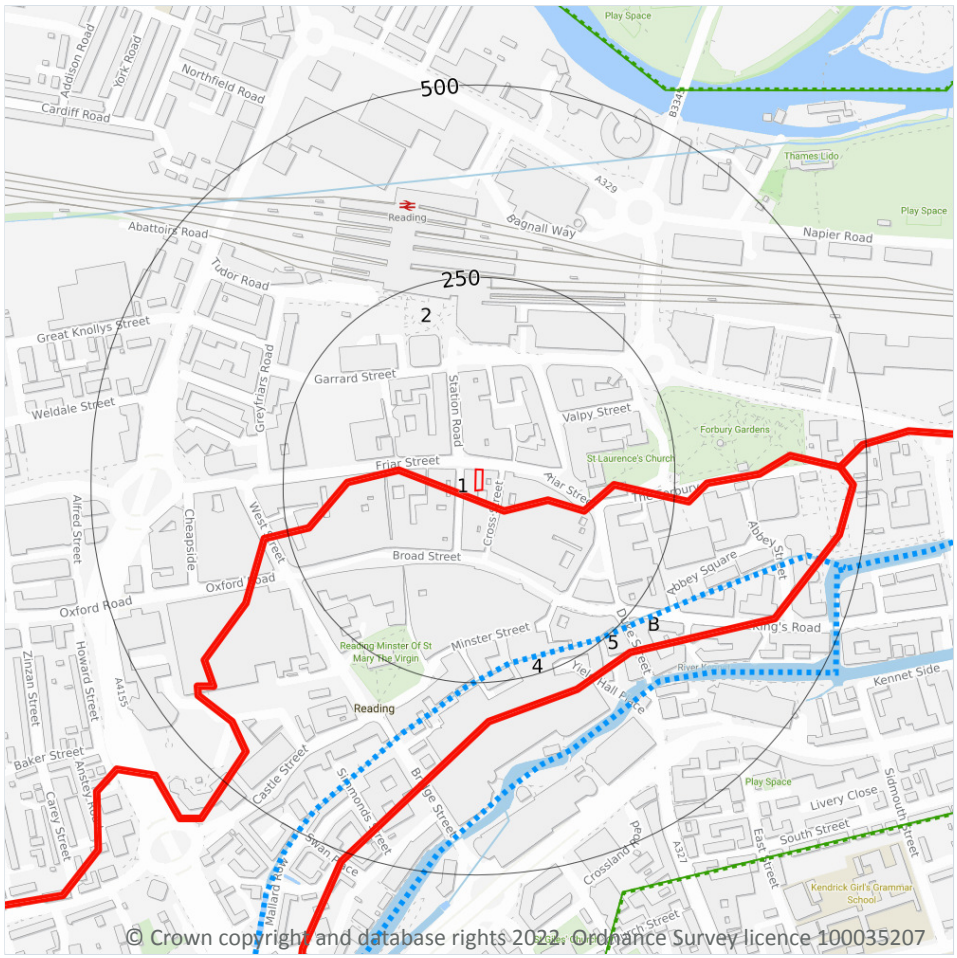
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	**3**

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 75**

ID	Location	Type of water feature	Ground level	Permanence	Name
4	227m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Holy Brook

ID	Location	Type of water feature	Ground level	Permanence	Name
5	245m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Holy Brook
B	248m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Holy Brook

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**0**

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	**1**

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 75**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	**On site**	**River**	**Thames Wallingford to Caversham**	**GB106039030331**	**Chilterns South**	**Thames and Chilterns South**

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified	**1**

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is

detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 75**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	548m NE	River	Thames Wallingford to Caversham	GB106039030331	Moderate	Fail	Moderate	2019

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site	**1**

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 75**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	**On site**	**Berkshire Downs Chalk**	**GB40601G600900**	**Poor**	**Poor**	**Poor**	**2019**

This data is sourced from the Environment Agency and Natural Resources Wales.

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m	0

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m	0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m	0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

8 Surface water flooding



Site Outline
Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**Negligible**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 81**

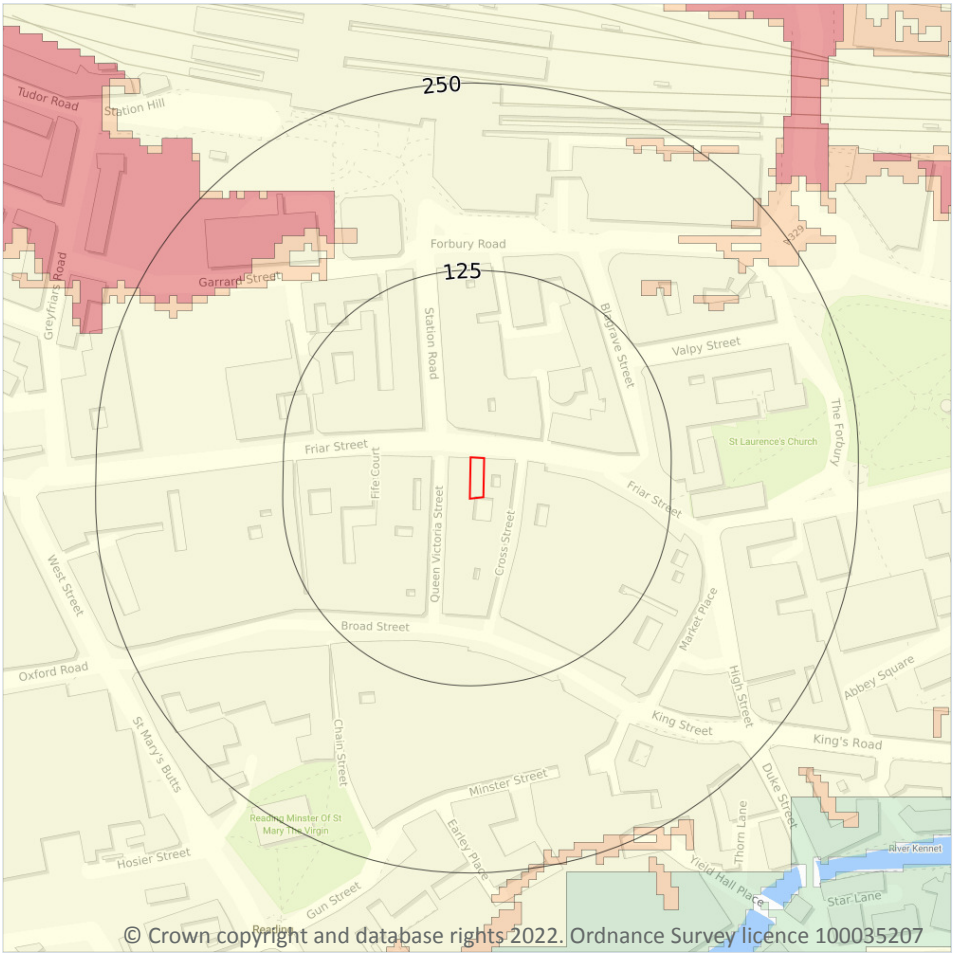
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



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9.1 Groundwater flooding

Highest risk on site	**Moderate**
Highest risk within 50m	**Moderate**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 83**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m	0

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m	0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m	0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m	0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m	0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m	2

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
73m W	Thames Wallingford to Caversham NVZ	Surface Water	481	Existing
1599m NE	Sheeplands	Groundwater	88	Existing

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site	0

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

This data is sourced from Natural England.

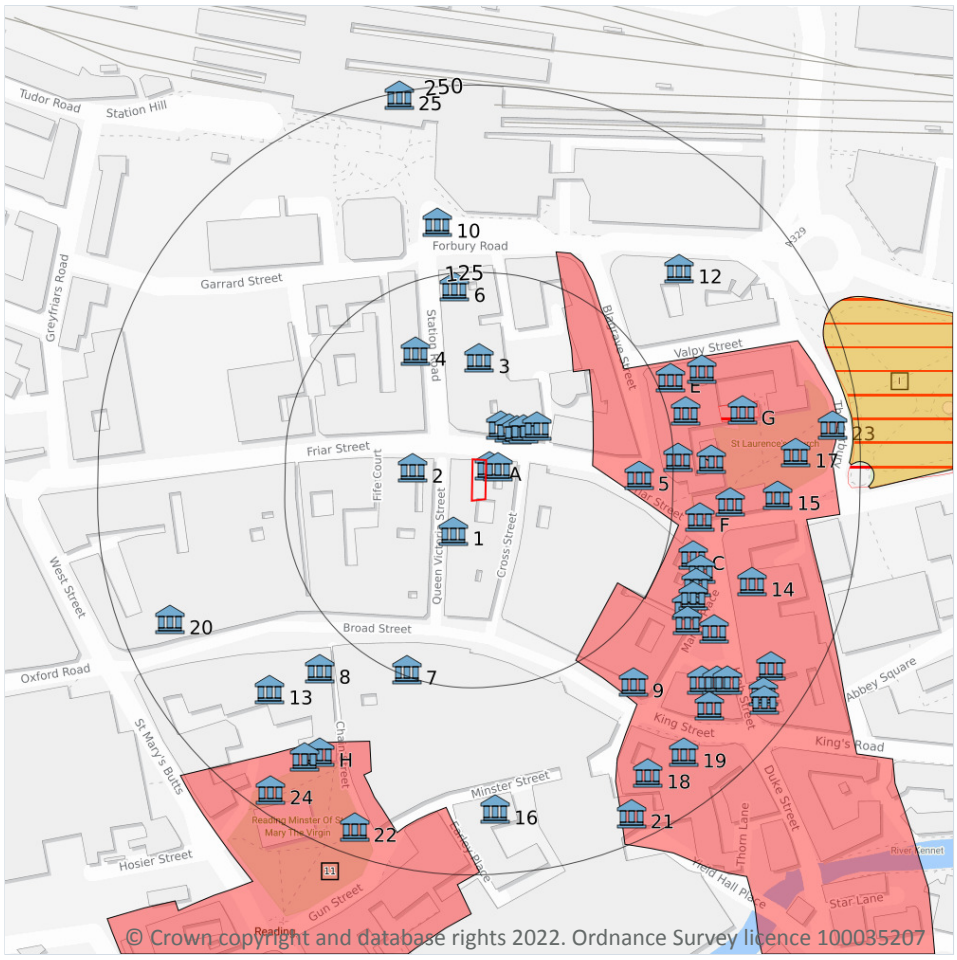
10.18 SSSI Units

Records within 2000m	0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations



11.1 World Heritage Sites

Records within 250m	0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m	0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m	55

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on **page 89**

ID	Location	Name	Grade	Reference Number	Listed date
A	2m E	154, Friar Street, Abbey, Reading, RG1	II	1113489	14/12/1978
A	8m E	155, Friar Street, Abbey, Reading, RG1	II	1303154	14/12/1978
1	23m SW	1-31, Queen Victoria Street (See Details For Further Address information), Abbey, Reading, RG1	II	1113564	14/12/1978
B	26m NE	15 Friar Street and Numbers 1 and 26 Harris Arcade, Reading, Abbey, Reading, RG1	II	1113486	22/03/1957
B	26m NE	14, Friar Street, Abbey, Reading, RG1	II	1113485	14/12/1978

ID	Location	Name	Grade	Reference Number	Listed date
B	29m NE	13, Friar Street, Abbey, Reading, RG1	II	1321950	14/12/1978
B	33m NE	12, Friar Street, Abbey, Reading, RG1	II	1113484	22/03/1957
2	40m W	147, Friar Street, Abbey, Reading, RG1	II	1113488	14/12/1978
B	41m NE	11, Friar Street, Abbey, Reading, RG1	II	1321949	22/03/1957
3	68m N	Numbers 8-10 Station Road and 2-25 Harris Arcade, Reading, Abbey, Reading, RG1	II	1473816	15/12/2021
4	82m NW	13 and 15, Station Road, Abbey, Reading, RG1	II	1113590	14/12/1978
5	102m E	Queen Victoria Jubilee Statue, Abbey, Reading, RG1	II	1113483	14/12/1978
6	116m N	Great Western House, Abbey, Reading, RG1	II	1113591	26/07/1973
7	121m S	Saxone, Abbey, Reading, RG1	II	1113407	14/12/1978
D	129m E	Town Council Chamber and offices With Clock Tower , Abbey, Reading, RG1	II*	1113400	22/03/1957
E	135m NE	Reading Museum, Abbey, Reading, RG1	II	1321990	24/07/1974
E	137m E	The Concert Hall, Abbey, Reading, RG1	II	1113401	24/07/1974
C	143m E	23-26, Market Place, Abbey, Reading, RG1	II	1113536	26/07/1973
F	144m E	Drinking Fountain On South Side of St Laurence's Tower, Abbey, Reading, RG1	II	1156250	26/07/1973
D	151m E	Small Town Hall, Abbey, Reading, RG1	II	1321989	22/03/1957
C	151m E	27 and 28, Market Place, Abbey, Reading, RG1	II	1302967	22/03/1957
8	151m SW	95, Broad Street, Abbey, Reading, RG1	II	1113406	14/12/1978
C	152m E	The Coopers Public House, Abbey, Reading, RG1	II	1113537	26/07/1973
C	152m SE	Trustee Savings Bank, Abbey, Reading, RG1	II	1113538	14/12/1978
C	153m SE	32, Market Place, Abbey, Reading, RG1	II	1156271	14/12/1978
E	156m NE	Former School of Art, Abbey, Reading, RG1	II	1113600	24/07/1974
9	157m SE	2 and 3 and 3a, Broad Street, Abbey, Reading, RG1	II	1154597	14/12/1978
C	157m SE	Corn Exchange Arcade Entrance, Abbey, Reading, RG1	II	1113539	26/07/1973
10	160m N	The Statue of King Edward Vii, Abbey, Reading, RG1	II	1113589	14/12/1978
F	163m E	Church of St Laurence, Abbey, Reading, RG1	I	1113532	22/03/1957
G	174m E	Municipal Buildings, Abbey, Reading, RG1	II	1113402	22/03/1957
C	176m SE	The Simeon Monument, Abbey, Reading, RG1	II*	1113534	22/03/1957

ID	Location	Name	Grade	Reference Number	Listed date
12	182m NE	Walter Parsons Corn Stores, Abbey, Reading, RG1	II	1248738	05/11/1993
13	185m SW	Congretional Church and Numbers 89 and 89a, Abbey, Reading, RG1	II	1321954	14/12/1978
14	186m E	National Westminster Bank, Abbey, Reading, RG1	II	1113535	26/07/1973
C	189m SE	48 and 49, Market Place, Abbey, Reading, RG1	II	1156281	26/07/1973
15	195m E	St Laurence's Church and Churchyard Twelve Tombs in St Laurence's Churchyard, Abbey, Reading, RG1	II	1113533	14/12/1978
C	196m SE	50 and 51, Market Place, Abbey, Reading, RG1	II	1113540	26/07/1973
H	196m SW	Church House, Abbey, Reading, RG1	II	1156954	22/03/1957
C	202m SE	10, High Street (See Details For Further Address information), Abbey, Reading, RG1	II	1113494	14/12/1978
C	204m SE	Barclays Bank, Abbey, Reading, RG1	II	1113497	03/03/1977
H	204m SW	Building To West of Church House, Abbey, Reading, RG1	II	1321887	14/12/1978
16	207m S	Telephone Exchange, Abbey, Reading, RG1	II	1302939	26/07/1973
17	207m E	Tracery Fragments To South of No 10, Abbey, Reading, RG1	II	1113392	14/12/1978
18	213m SE	The George Hotel, Abbey, Reading, RG1	II	1155931	22/03/1957
19	215m SE	17 and 18, King Street, Abbey, Reading, RG1	II	1113498	22/03/1957
20	216m W	67 and 68, Broad Street, Abbey, Reading, RG1	II	1113405	14/12/1978
C	221m SE	1 and 2, Market Place, Abbey, Reading, RG1	II	1156257	14/12/1978
C	225m SE	The High, Abbey, Reading, RG1	II	1113493	19/03/1975
C	230m SE	7, High Street, Abbey, Reading, RG1	II	1155910	19/03/1975
21	232m SE	Building On South East Corner, Abbey, Reading, RG1	II	1302482	14/12/1978
22	232m S	Group of 4 Churchyard Tombs, East of St Mary's Church, Abbey, Reading, RG1	II	1321886	14/12/1978
23	233m E	Wall and Gatepiers of St Laurence's Graveyard, Abbey, Reading, RG1	II	1155686	19/03/1975
24	235m SW	Group of 4 Churchyard Tombs North of St Mary's Church, Abbey, Reading, RG1	II	1156950	14/12/1978
25	248m N	Main Building of Reading General Station, Abbey, Reading, RG1	II	1321892	21/01/1976

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m	2

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

Features are displayed on the Visual and cultural designations map on **page 89**

ID	Location	Name	District	Date of designation
C	71m E	Market Place and London Street, Reading	Reading	1972
11	175m SW	St Mary's Butts and Castle Street, Reading	Reading	1972

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m	2

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

Features are displayed on the Visual and cultural designations map on **page 89**

ID	Location	Ancient monument name	Reference number
G	159m E	Reading Abbey: a Cluniac and Benedictine monastery and Civil War earthwork.	1007932
I	239m E	Reading Abbey: a Cluniac and Benedictine monastery and Civil War earthwork.	1007932

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m	1

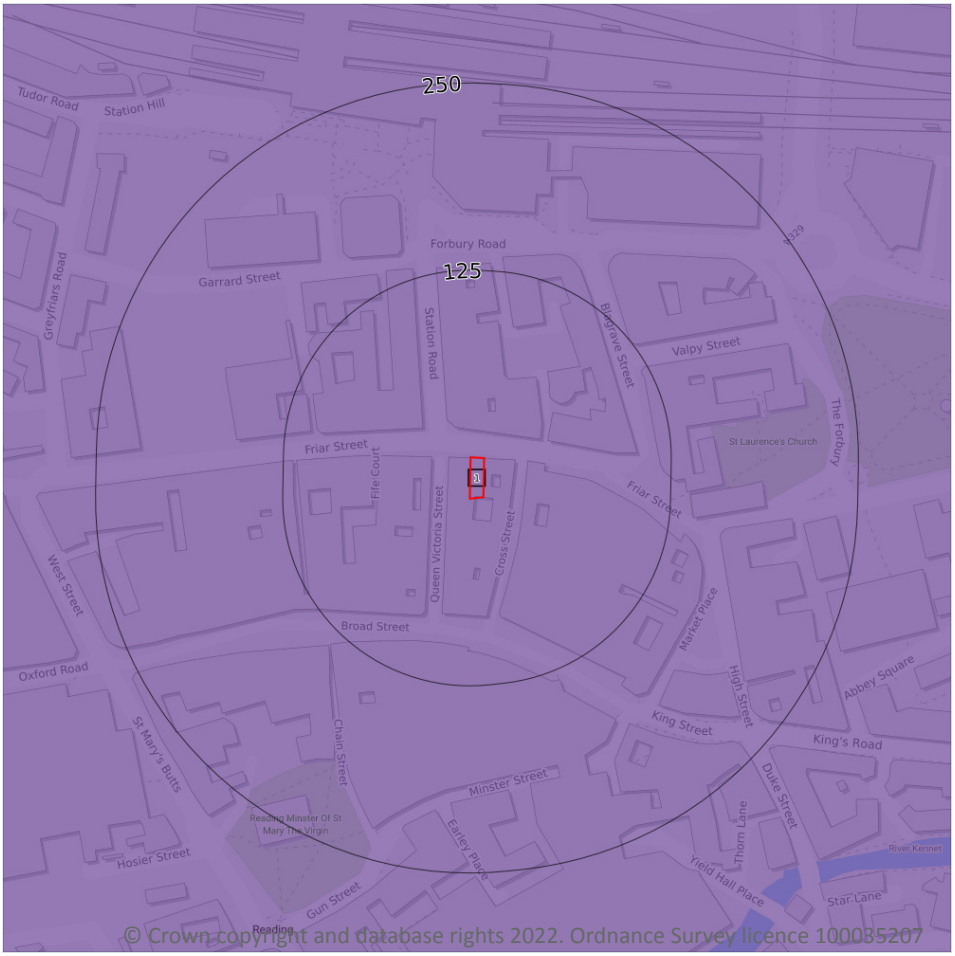
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

Features are displayed on the Visual and cultural designations map on **page 89**

ID	Location	Name	Grade
I	239m E	The Forbury Garden	II

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 95**

ID	Location	Classification	Description
1	**On site**	**Urban**	-

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m	0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

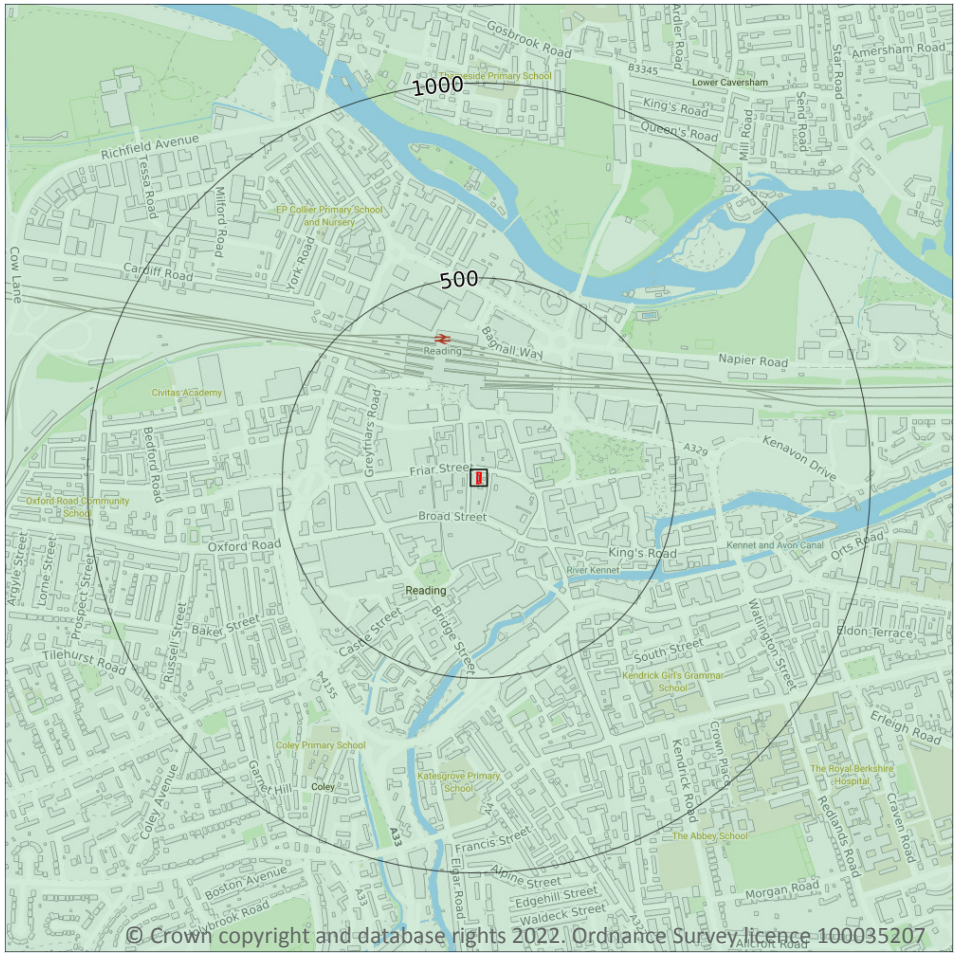
13.4 Limestone Pavement Orders

Records within 250m	0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



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Site Outline

Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m	1

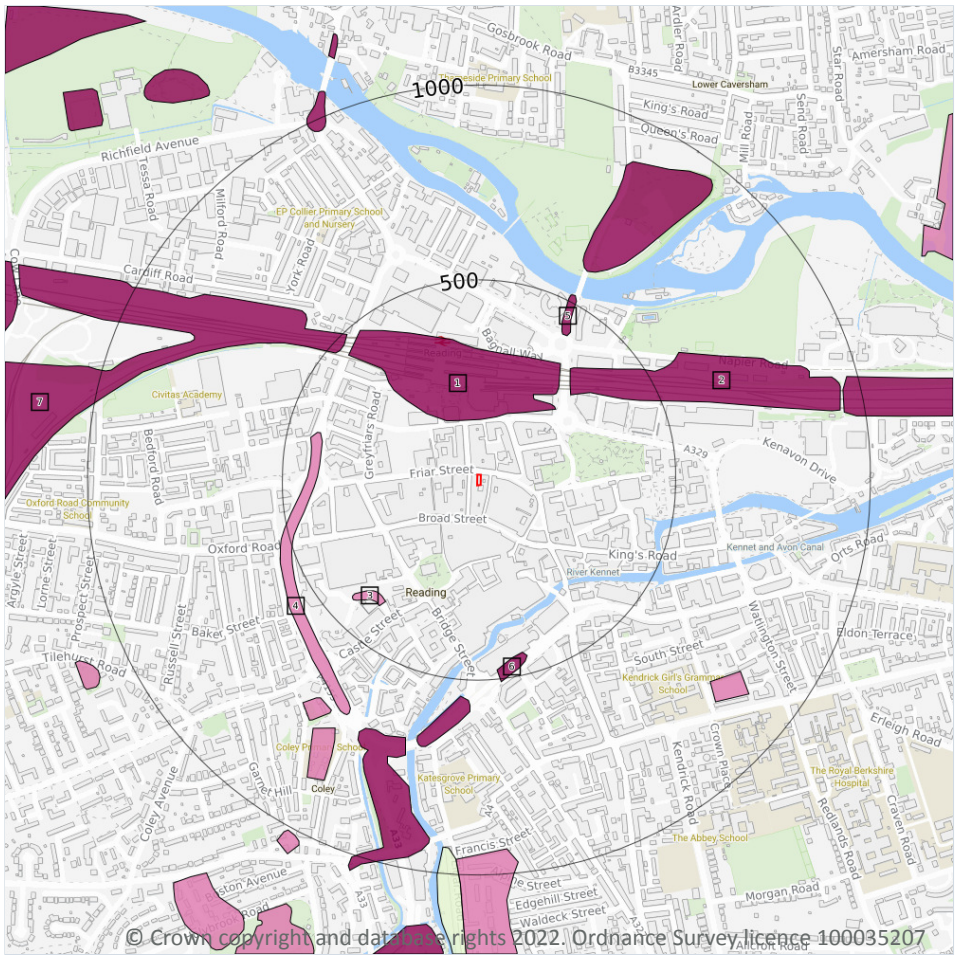
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 98**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SU77SW**

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Artificial and made ground



14.2 Artificial and made ground (10k)

Records within 500m **7**

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

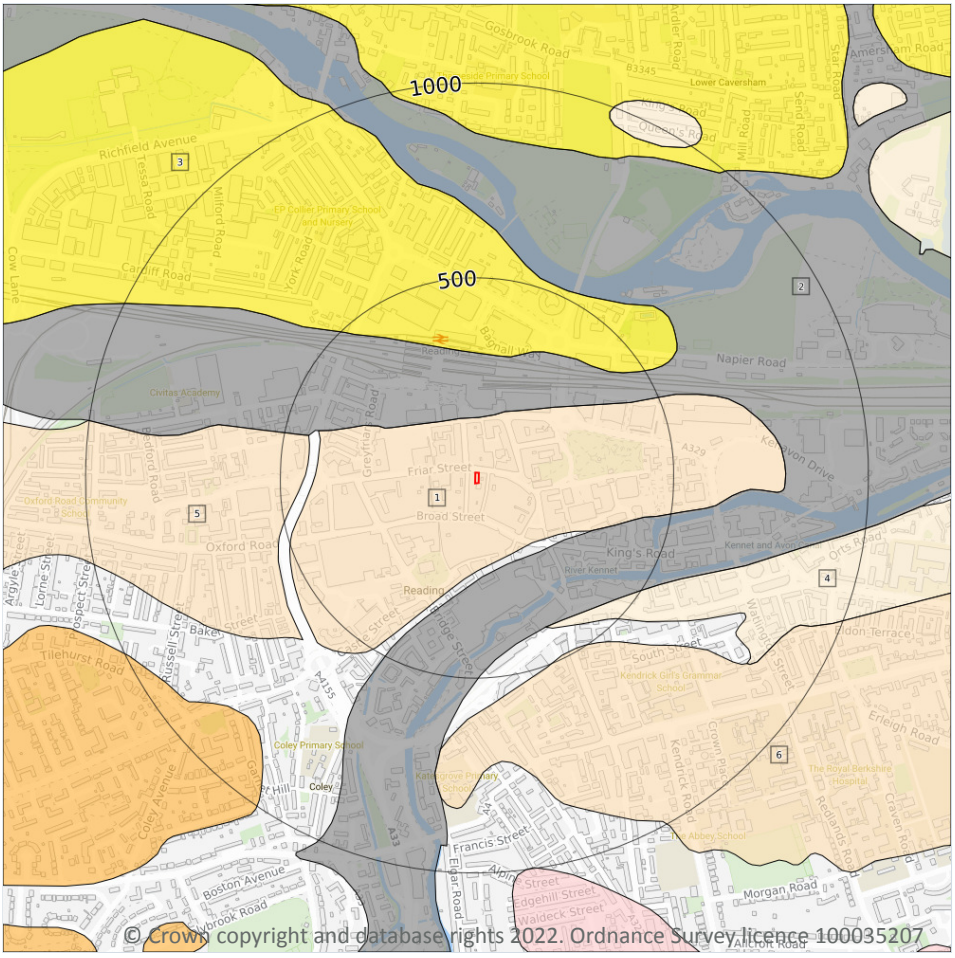
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 99**

ID	Location	LEX Code	Description	Rock description
1	141m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	309m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	374m SW	WGR-VOID	Worked Ground (Undivided)	Void
4	405m W	WGR-VOID	Worked Ground (Undivided)	Void

ID	Location	LEX Code	Description	Rock description
5	418m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	442m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
7	475m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



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Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m **6**

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 101**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TPGR-XSV**	**Taplow Gravel Formation - Sand And Gravel**	**Sand And Gravel**
2	141m N	ALV-Z	Alluvium - Silt (unlithified Deposits Coding Scheme)	Silt
3	304m N	LASI-XCZ	Langley Silt Member - Clay And Silt	Clay And Silt
4	408m SE	KPGR-XSV	Kempton Park Gravel Formation - Sand And Gravel	Sand And Gravel

ID	Location	LEX Code	Description	Rock description
5	429m W	TPGR-XSV	Taplow Gravel Formation - Sand And Gravel	Sand And Gravel
6	491m SE	TPGR-XSV	Taplow Gravel Formation - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.

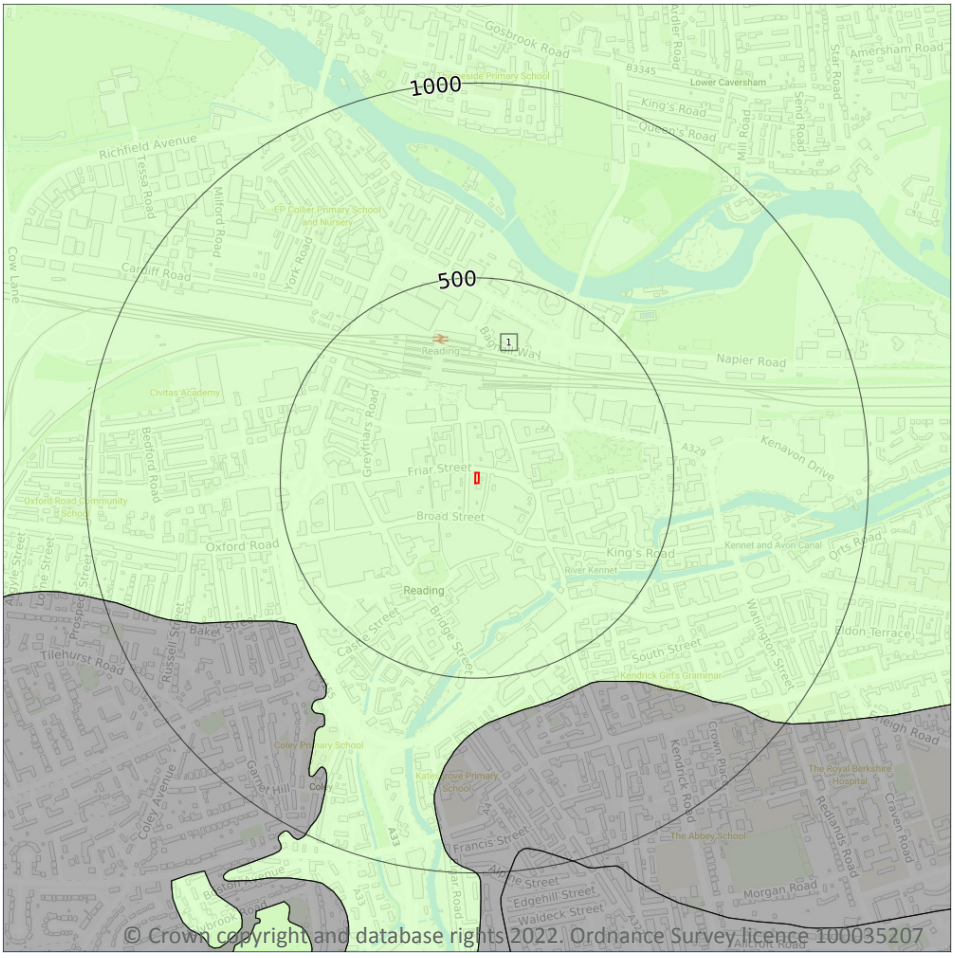
14.4 Landslip (10k)

Records within 500m	**0**

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m	1

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 103**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**LSNCK-CHLK**	**Lewes Nodular Chalk Formation, Seaford Chalk Formation And Newhaven Chalk Formation (undifferentiated) - Chalk**	**Campanian Age - Turonian Age**

This data is sourced from the British Geological Survey.

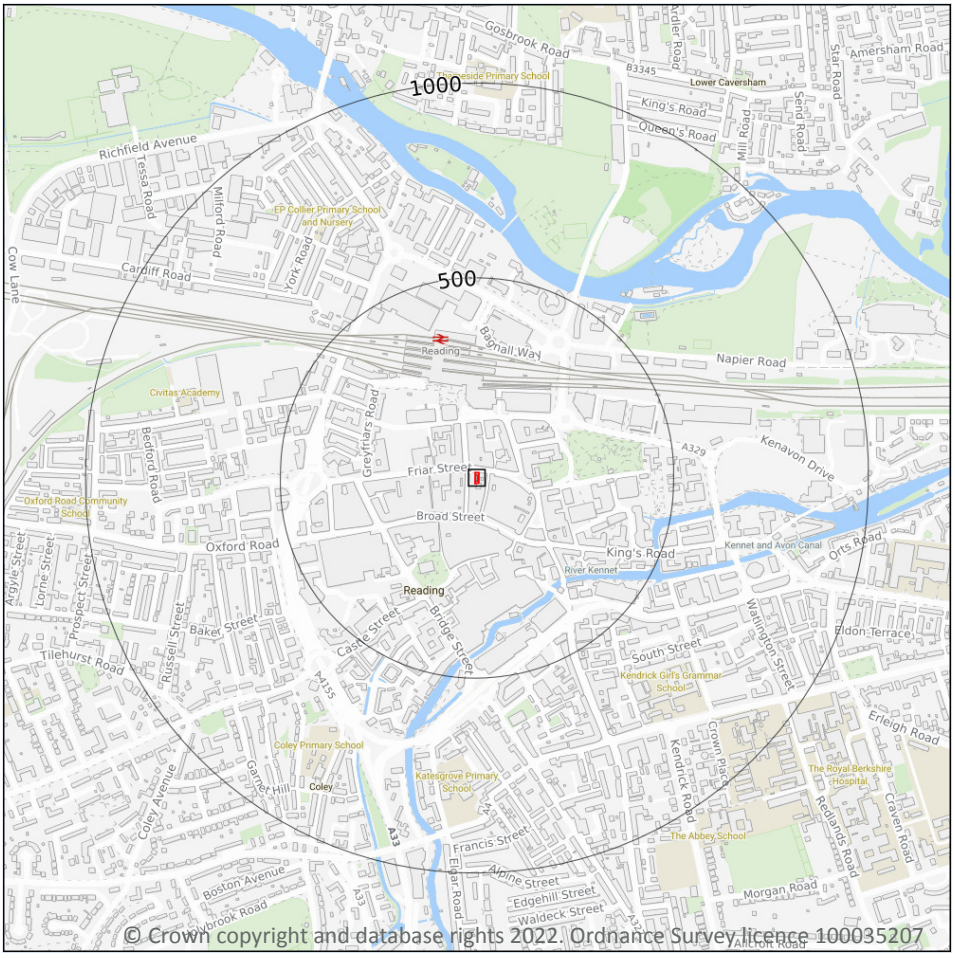
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



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Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 105**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**EW268_reading_v4**

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m	0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

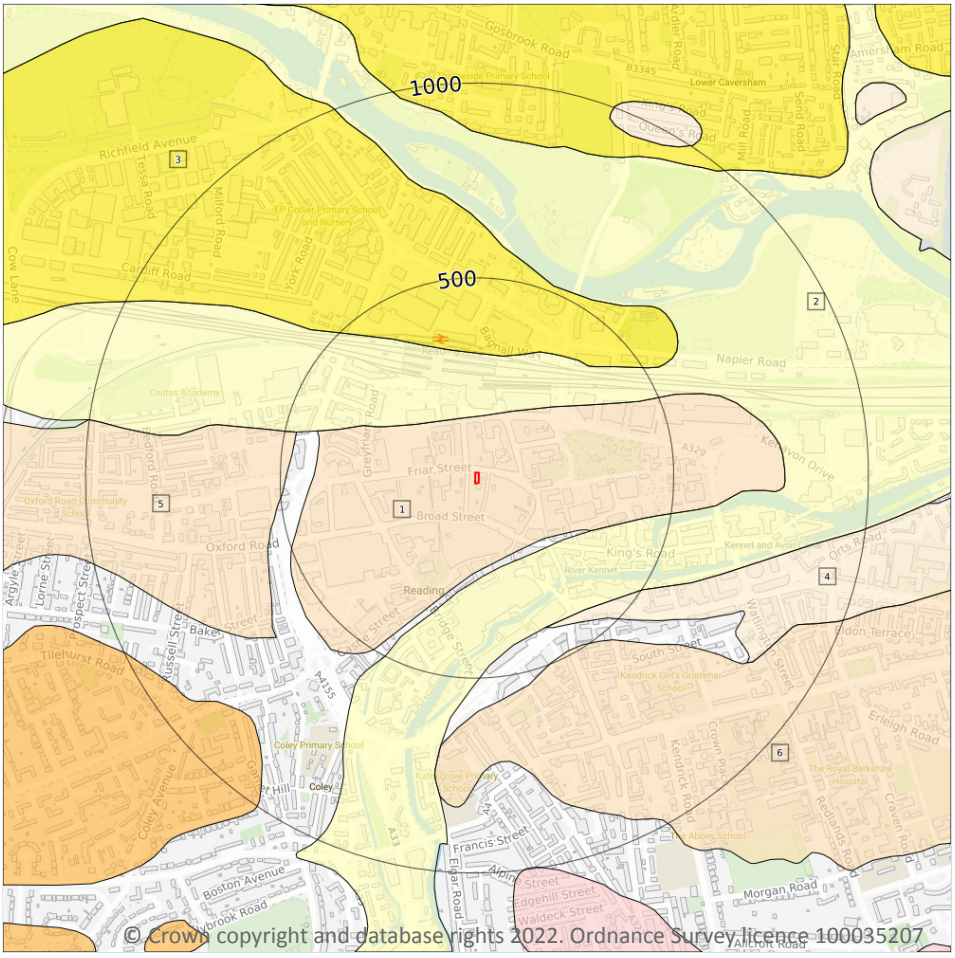
15.3 Artificial ground permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m **6**

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 107**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TPGR-XSV**	**TAPLOW GRAVEL MEMBER**	**SAND AND GRAVEL**
2	143m N	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	305m N	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT
4	409m SE	KPGR-XSV	KEMPTON PARK GRAVEL MEMBER	SAND AND GRAVEL

ID	Location	LEX Code	Description	Rock description
5	470m W	TPGR-XSV	TAPLOW GRAVEL MEMBER	SAND AND GRAVEL
6	488m SE	TPGR-XSV	TAPLOW GRAVEL MEMBER	SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	**1**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**Very High**	**High**

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	**0**

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

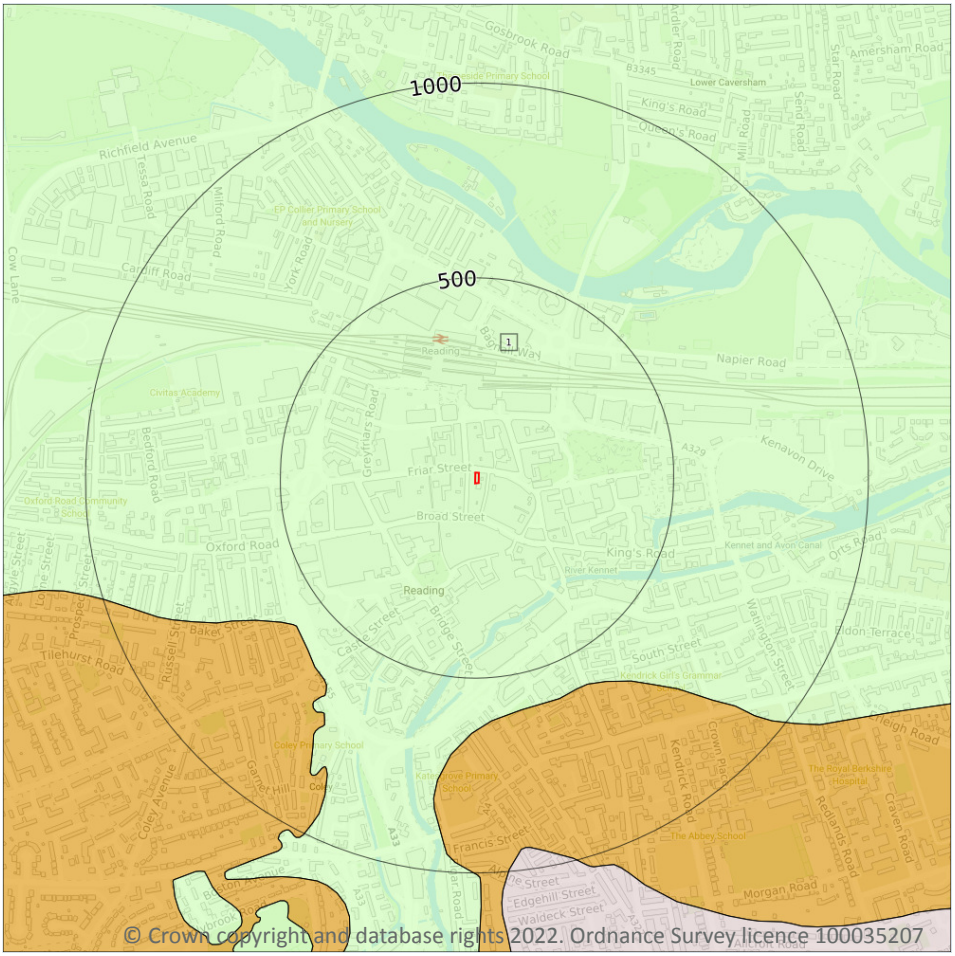
15.7 Landslip permeability (50k)

Records within 50m	**0**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m	1

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 109**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**SNCK-CHLK**	**SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION (UNDIFFERENTIATED) - CHALK**	**CONIACIAN**

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Very High**	**Very High**

This data is sourced from the British Geological Survey.

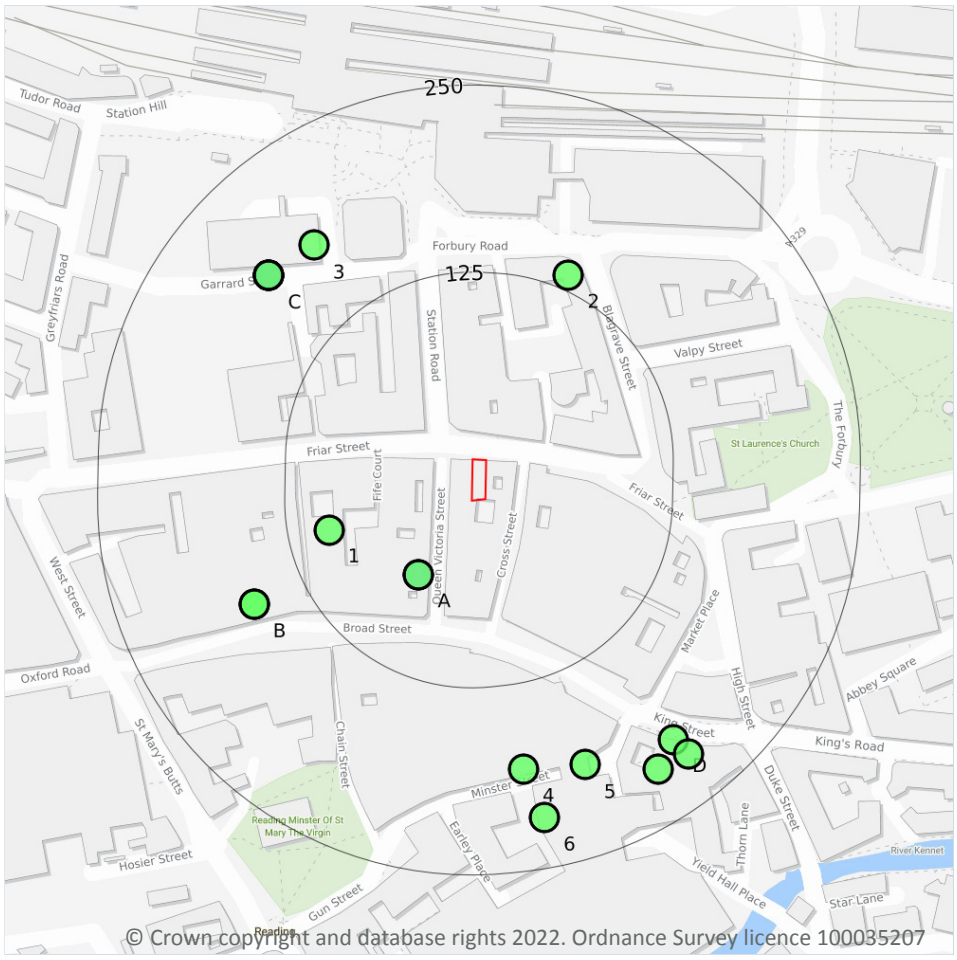
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m **18**

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

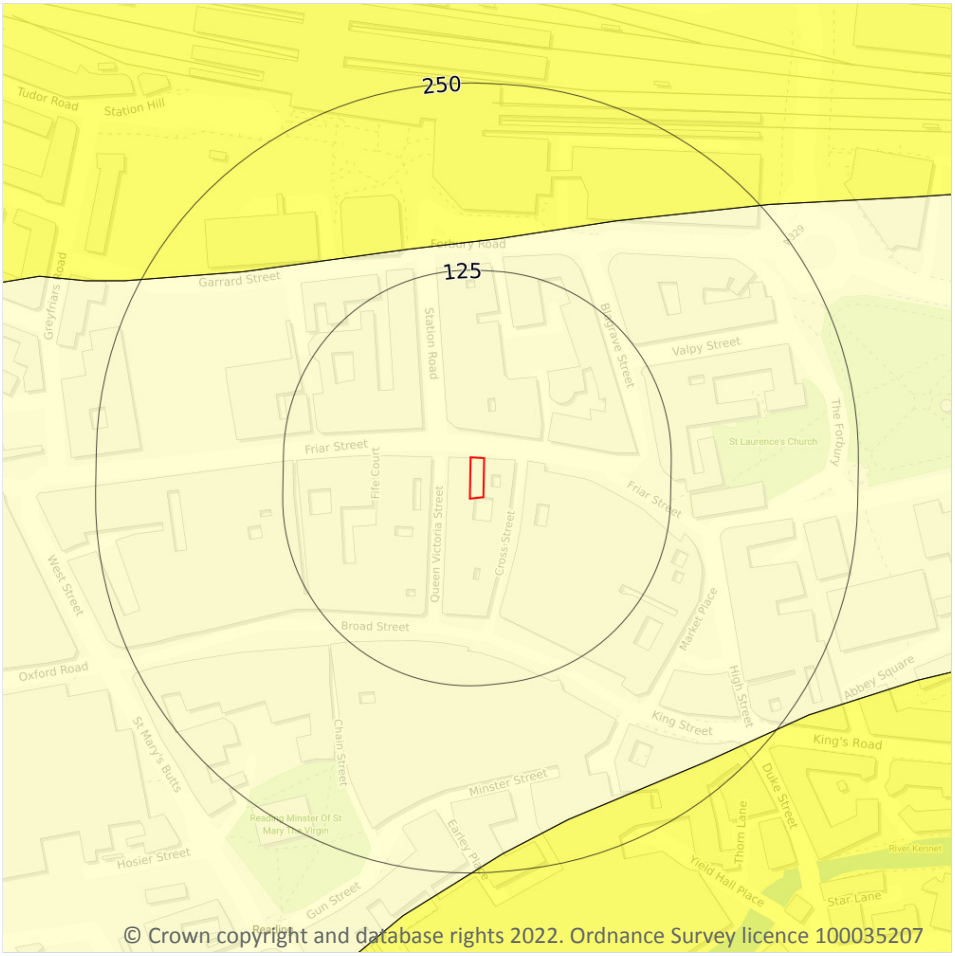
Features are displayed on the Boreholes map on **page 111**

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	61m SW	471500 173500	147 FRIARS STREET READING	6.1	N	428780
A	61m SW	471500 173500	22/24 CROSS STREET READING	12.19	N	428781
1	97m W	471440 173530	UNION STREET READING	26.21	N	428197

ID	Location	Grid reference	Name	Length	Confidential	Web link
2	135m NE	471600 173700	READING HPO EXTENSION	15.24	N	428154
B	161m SW	471390 173480	BROAD STREET READING 1	22.25	N	428343
B	161m SW	471390 173480	BROAD STREET READING 2	18.29	N	428344
3	178m NW	471430 173720	VINCENTS GARAGE STATION SQUARE READING	18.28	N	428170
4	182m S	471570 173370	BROAD STREET READING	25.9	N	428177
C	183m NW	471400 173700	GARRARD ST READING PHASE 3 BH4	15.24	N	428267
C	183m NW	471400 173700	GARRARD ST READING PHASE 3 BH2	9.14	N	428265
C	183m NW	471400 173700	GARRARD ST READING PHASE 3 BH1	18.29	N	428264
C	183m NW	471400 173700	GARRARD ST READING PHASE 3 BH5	7.62	N	428268
C	183m NW	471400 173700	GARRARD ST READING PHASE 3 BH3	10.67	N	428266
5	190m S	471611 173373	THE ORACLE READING 1	30.0	N	428479
D	204m SE	471670 173390	17-23 KING STREET READING 1	12.0	N	15047435
D	214m SE	471660 173370	17-23 KING STREET READING 2	11.5	N	15047436
6	216m S	471584 173338	THE ORACLE READING 2	30.0	N	428480
D	218m SE	471680 173380	17-23 KING STREET READING 3	12.0	N	15047437

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.1 Shrink swell clays

Records within 50m	1

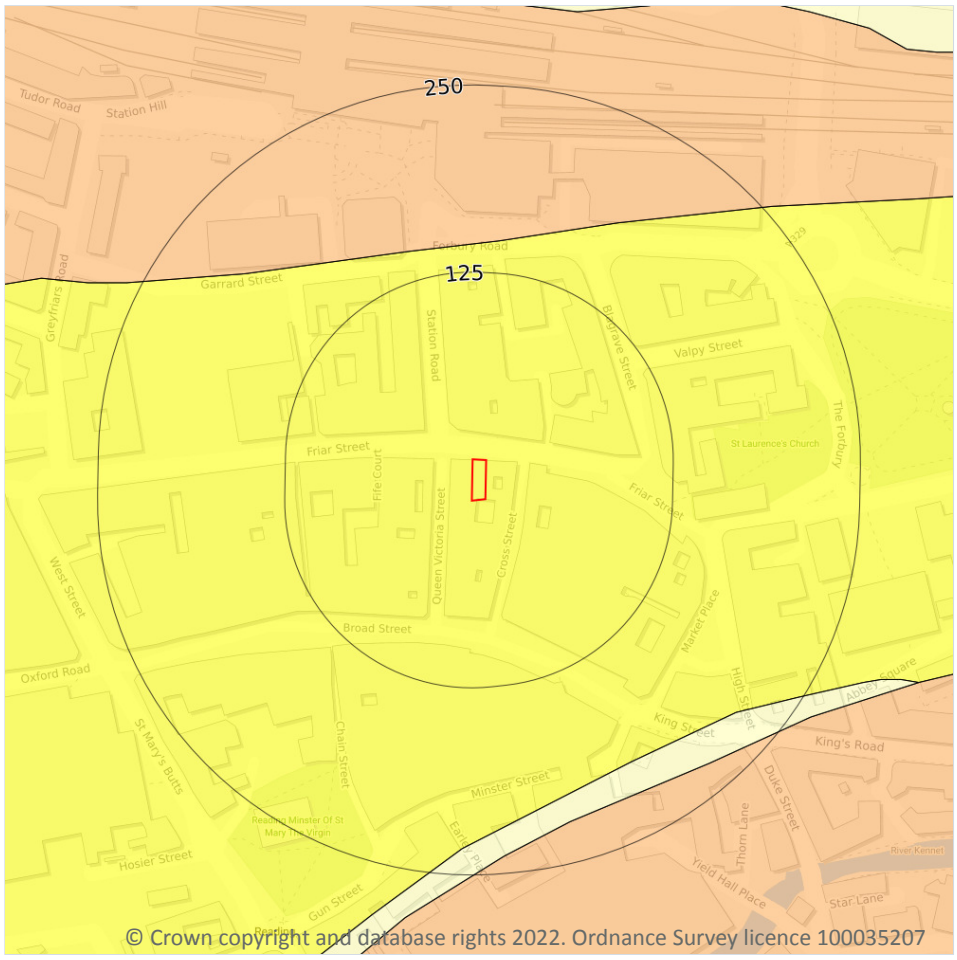
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 113**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	1

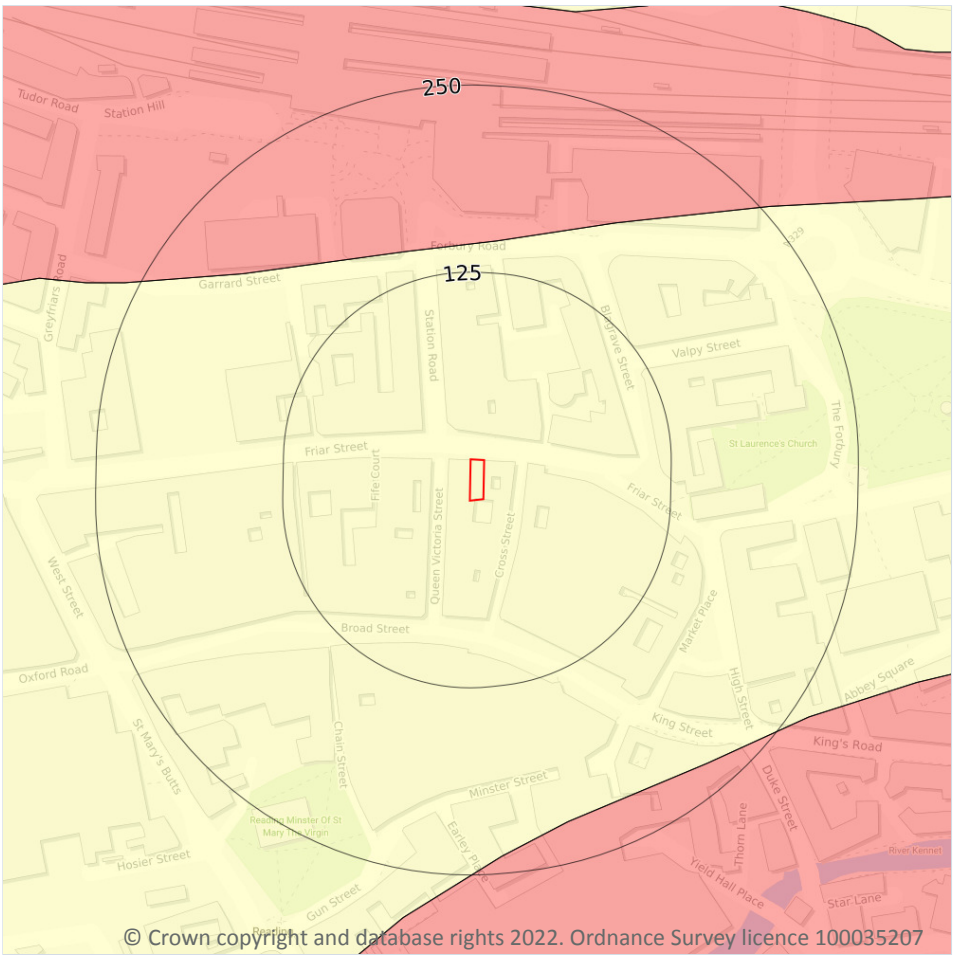
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 114**

Location	Hazard rating	Details
On site	**Very low**	**Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	1

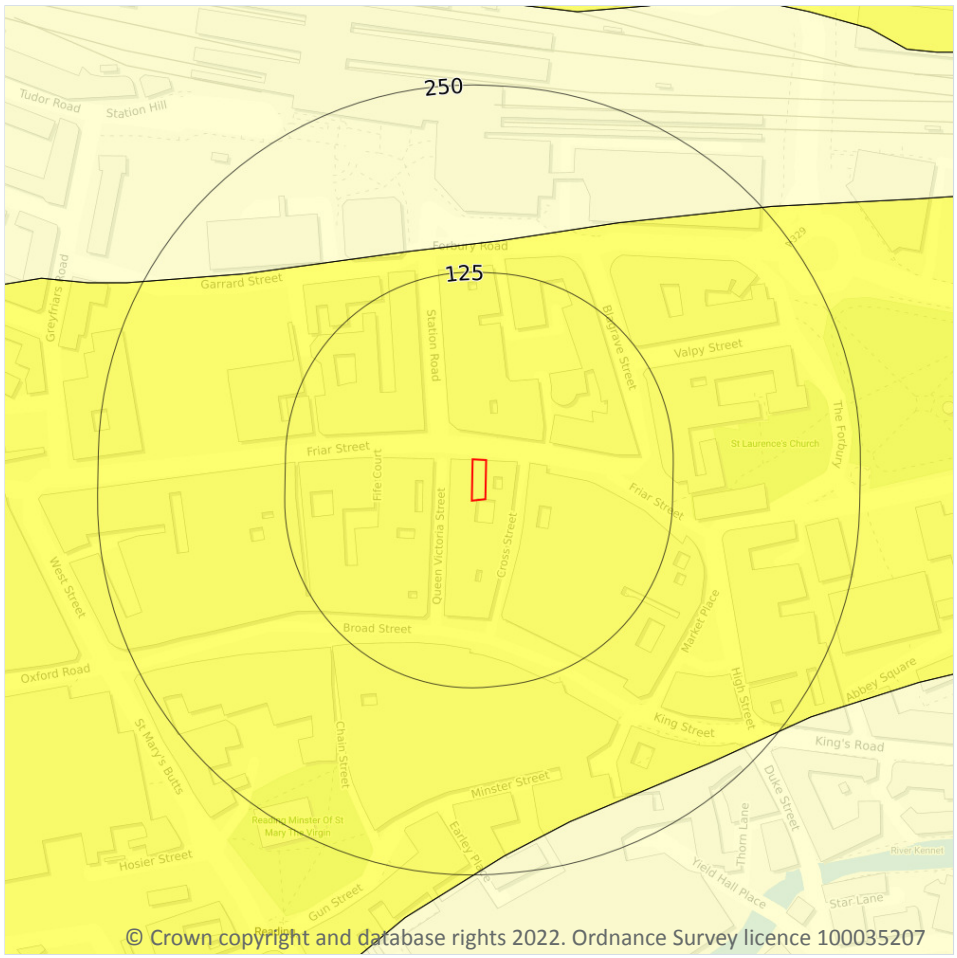
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 115**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	1

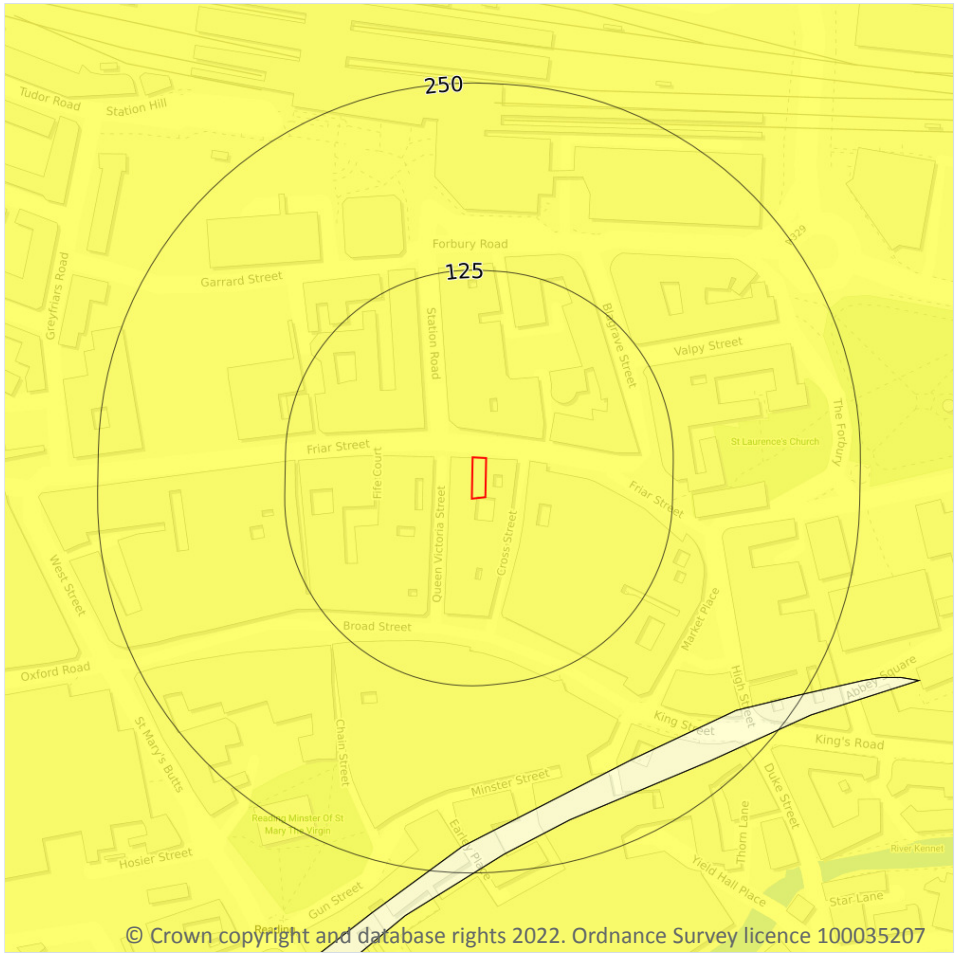
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 116**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	1

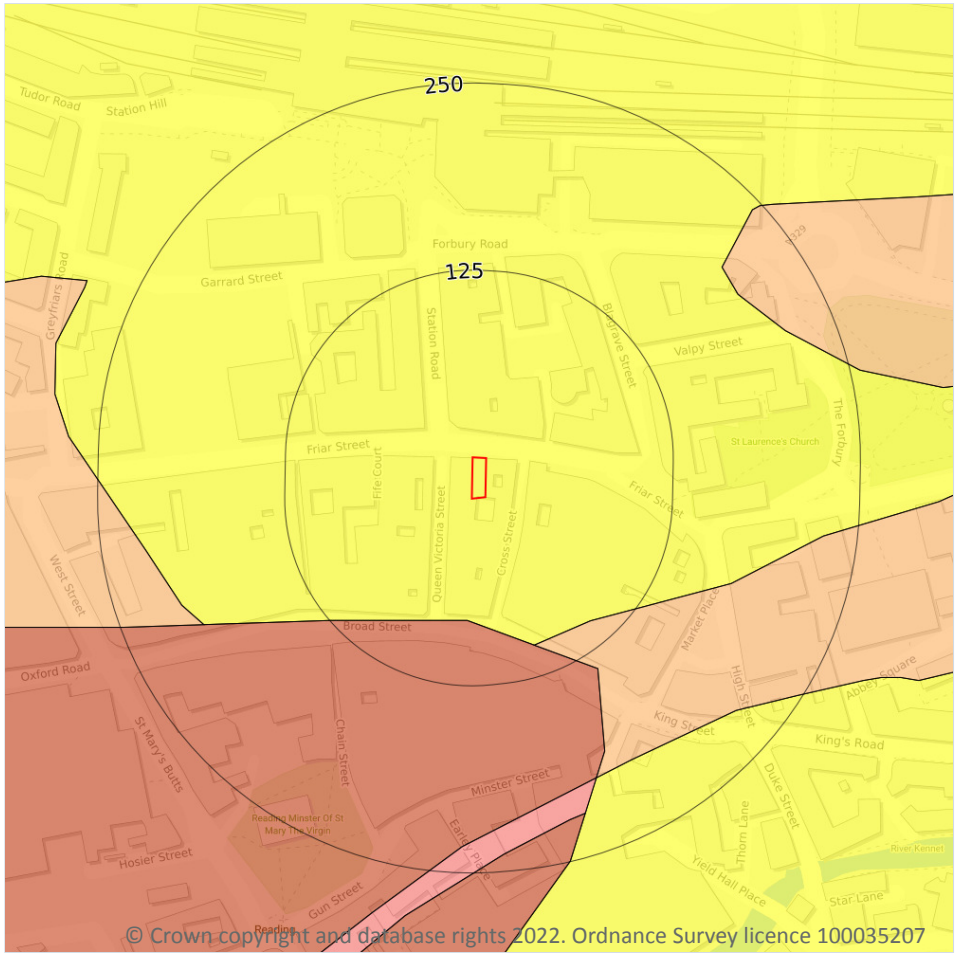
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 117**

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	1

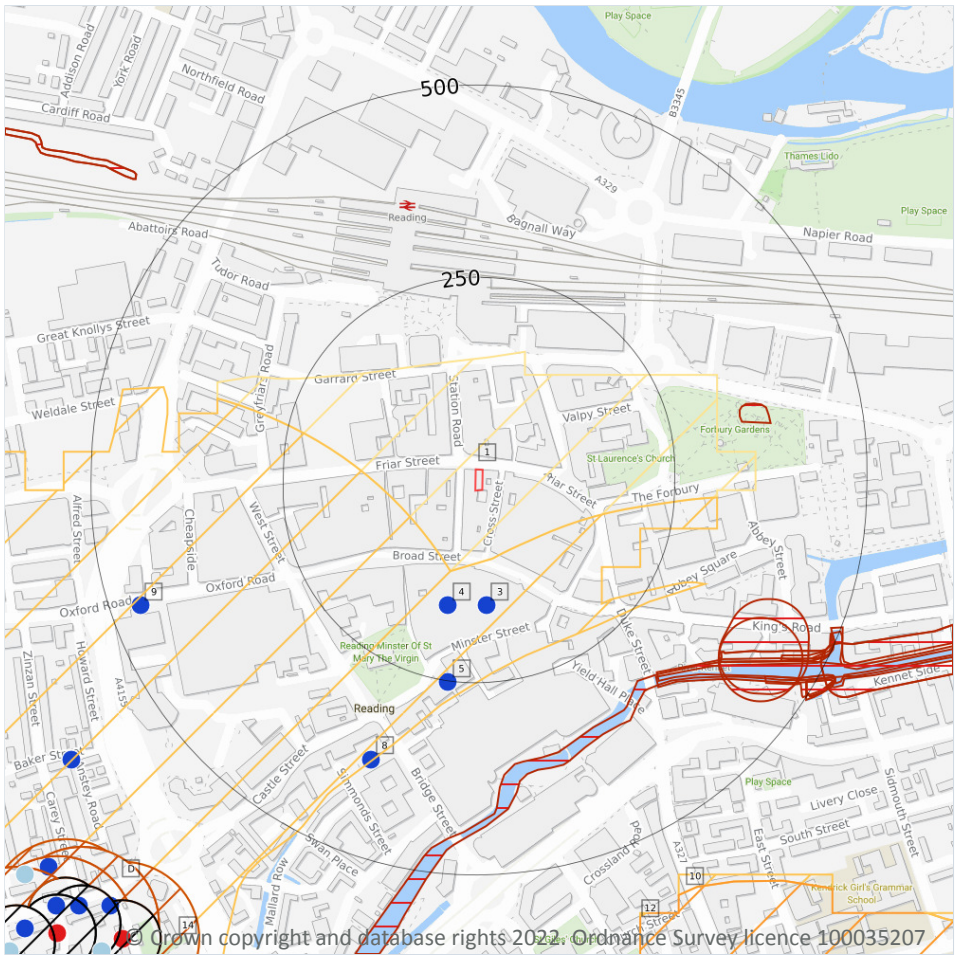
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 118**

Location	Hazard rating	Details
On site	**Very low**	**Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.**

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	5

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

Features are displayed on the Mining, ground workings and natural cavities map on **page 120**

ID	Location	Details	Source
3	150m S	Type: Solution Pipe x 5 Superficial Geology: Taplow Gravel Bedrock Geology: Chalk Group	Simple Bibliography: Reading Borough Council Full Bibliography: - Confidentiality: Data source can be revealed, data can be used freely

ID	Location	Details	Source
4	153m S	Type: Solution Pipe x 3 Superficial Geology: Taplow Gravel Bedrock Geology: Chalk Group	Simple Bibliography: Reading Borough Council Full Bibliography: - Confidentiality: Data source can be revealed, data can be used freely
5	251m S	Type: Solution Pipe x 1 Superficial Geology: Taplow Gravel Bedrock Geology: Chalk Group	Simple Bibliography: Reading Borough Council Full Bibliography: - Confidentiality: Data source can be revealed, data can be used freely
8	374m S	Type: Solution Pipe x 2 Superficial Geology: Taplow Gravel Bedrock Geology: Chalk Group	Simple Bibliography: Reading Borough Council Full Bibliography: - Confidentiality: Data source can be revealed, data can be used freely
9	460m W	Type: Solution Pipe x 3 Superficial Geology: Taplow Gravel Bedrock Geology: Chalk Group	Simple Bibliography: Reading Borough Council Full Bibliography: - Confidentiality: Data source can be revealed, data can be used freely

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	**0**

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	**0**

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	**0**

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	46

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining, ground workings and natural cavities map on **page 120**

ID	Location	Name	Commodity	Class	Likelihood
1	**On site**	**Not available**	**Chalk**	**A**	**Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered**
2	86m SE	Not available	Chalk	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
10	562m SE	Not available	Chalk	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
11	586m SE	Not available	Chalk	C	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered
12	588m S	Not available	Chalk	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
14	642m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered

ID	Location	Name	Commodity	Class	Likelihood
D	661m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
D	671m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
D	692m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
D	692m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	703m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
D	711m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
D	719m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	735m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
D	742m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
D	742m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered

ID	Location	Name	Commodity	Class	Likelihood
-	776m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	779m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	786m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	788m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
D	789m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	790m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
18	799m SE	Not available	Chalk	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
-	809m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	818m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	823m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered

ID	Location	Name	Commodity	Class	Likelihood
-	829m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	836m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	847m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	851m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	860m E	Not available	Chalk	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
-	873m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	896m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	898m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	901m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	908m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered

ID	Location	Name	Commodity	Class	Likelihood
-	921m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	924m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	928m S	Not available	Chalk	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
-	930m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	935m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	956m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	957m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	996m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	996m SW	Not available	Chalk	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	996m SW	Not available	Chalk	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	**24**

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

Features are displayed on the Mining, ground workings and natural cavities map on **page 120**

ID	Location	Mine Address	Mineral	Data source	Publisher
-	669m S	Reading, Berkshire	Chalk	-	-
D	769m SW	Reading (Coley), Berkshire	Chalk	-	-
D	770m SW	Reading (Coley), Berkshire	Chalk	-	-
D	771m SW	Reading (Coley), Berkshire	Chalk	-	-
-	775m SE	Jubilee Square, Reading, Berkshire	Chalk	-	PhD Thesis, University of Reading
D	776m SW	Reading (Coley), Berkshire	Chalk	-	-
D	777m SW	Reading (Coley), Berkshire	Chalk	-	-
-	795m SE	Reading, Berkshire	Chalk	-	PhD Thesis, University of Reading
D	804m SW	Reading (Coley), Berkshire	Chalk	-	-
-	811m SW	Reading (Coley), Berkshire	Chalk	-	-
-	837m S	Reading, Berkshire	Chalk	-	PhD Thesis, University of Reading
-	842m SW	Reading (Coley), Berkshire	Chalk	-	-
D	852m SW	Reading (Coley), Berkshire	Chalk	-	-
-	865m S	Shearmans Brick Kiln, Reading, Berkshire	Chalk	-	PhD Thesis, University of Reading
-	900m S	Katesgrove Kilns (1), Reading, Berkshire	Chalk	-	PhD Thesis, University of Reading

ID	Location	Mine Address	Mineral	Data source	Publisher
-	914m S	Shearmans Brick Kiln, Reading, Berkshire	Chalk	-	PhD Thesis, University of Reading
-	915m SW	Reading (Coley), Berkshire	Chalk	-	-
-	921m SW	Castle Hill Kiln, Reading (Coley), Berkshire	Chalk	-	-
-	922m SE	The Old Orchard Kiln, Reading, Berkshire	Chalk	-	PhD Thesis, University of Reading
-	950m S	Katesgrove Kilns (2), Reading, Berkshire	Chalk	READING CHALK MINES	TRANS.GEO.SOC., 4, 780
-	951m SW	Reading (Coley), Berkshire	Chalk	-	-
-	955m SW	Coley Potteries, Reading (Coley), Berkshire	Chalk	The Brick-making Industry in Reading: A Temporal & Spatial Analysis	Undergraduate Dissertation, University of Reading
-	971m SW	Reading (Coley), Berkshire	Chalk	-	-
-	982m SW	Reading (Coley), Berkshire	Chalk	-	-

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	**1**

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

Location	Details
On site	**Whilst outside of an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) may have information such as mining plans and maps held within their archive that have occurred within 1km of this property. Please note, the plans held by JPB may also relate to non-mining records. Further details and a quote for services (if appropriate) can be obtained by emailing this report to enquiries.gs@jpb.co.uk.**

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 Clay mining

Records on site	0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Radon



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19.1 Radon

Records on site	1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 130**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Less than 1%**	**None****

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	3

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km^2. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km^2; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
35m W	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
49m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

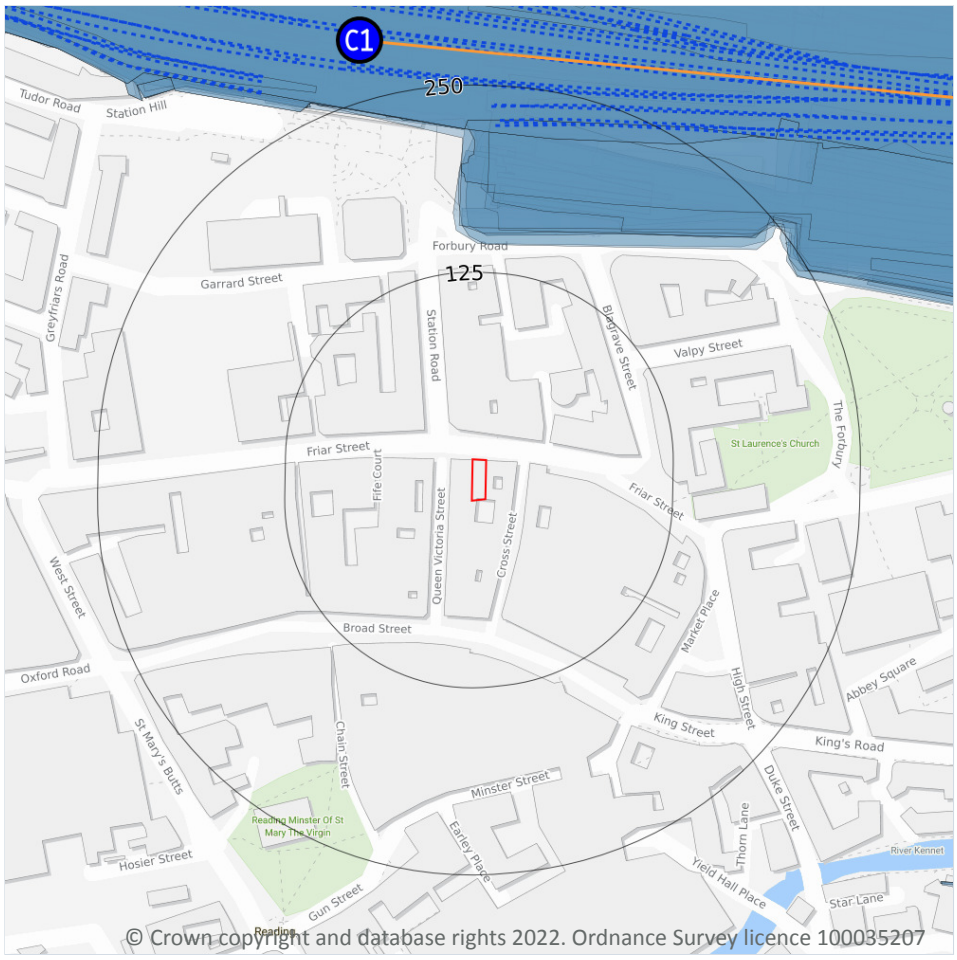
20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects



Site Outline

Search buffers in metres (m)

- Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m	0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	34

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on **page 132**

Location	Land Use	Year of mapping	Mapping scale
144m N	Railway Sidings	1898	10560
144m N	Railway	1898	-
150m N	Railway	1932	-
150m N	Railway	1910	-
151m N	Railway Sidings	1962	10560
154m N	Railway Sidings	1938	10560
155m N	Railway Sidings	1938	10560
168m N	Railway Sidings	1957	2500
168m N	Railway Sidings	1958	2500
169m N	Railway Sidings	1900	2500
171m N	Railway Sidings	1913	10560
173m N	Railway Sidings	1912	2500
173m N	Railway Sidings	1931	2500
173m N	Railway Sidings	1962	1250
173m N	Railway Sidings	1956	1250
178m N	Railway Sidings	1933	10560
183m N	Railway	1879	-

Location	Land Use	Year of mapping	Mapping scale
186m N	Railway Sidings	1879	2500
189m N	Railway Sidings	1879	500
218m N	Railway Sidings	1994	10000
218m N	Railway Sidings	1989	10000
221m N	Railway Sidings	1977	10000
221m N	Railway Sidings	1971	10000
225m N	Railway Sidings	1986	1250
225m N	Railway Sidings	1979	1250
225m N	Railway Sidings	1988	1250
226m N	Railway Sidings	1993	1250
231m N	Railway Sidings	1957	2500
231m N	Railway Sidings	1958	2500
231m N	Railway Sidings	1962	1250
231m N	Railway Sidings	1956	1250
234m N	Railway Sidings	1879	500
235m N	Railway Sidings	1971	1250
236m N	Railway Sidings	1879	2500

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	9

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

Features are displayed on the Railway infrastructure and projects map on **page 132**

Location	Name	Type
223m N		rail
226m N	Not given	Multi Track
227m N		rail
229m N		rail
236m N		rail
237m N	Not given	Single Track
237m N	Not given	Single Track
238m N		rail
250m N	Reading to Plymouth Line	rail

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	1

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

Features are displayed on the Railway infrastructure and projects map on **page 132**

Location	Route Type
271m N	Surface Alignment

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference.

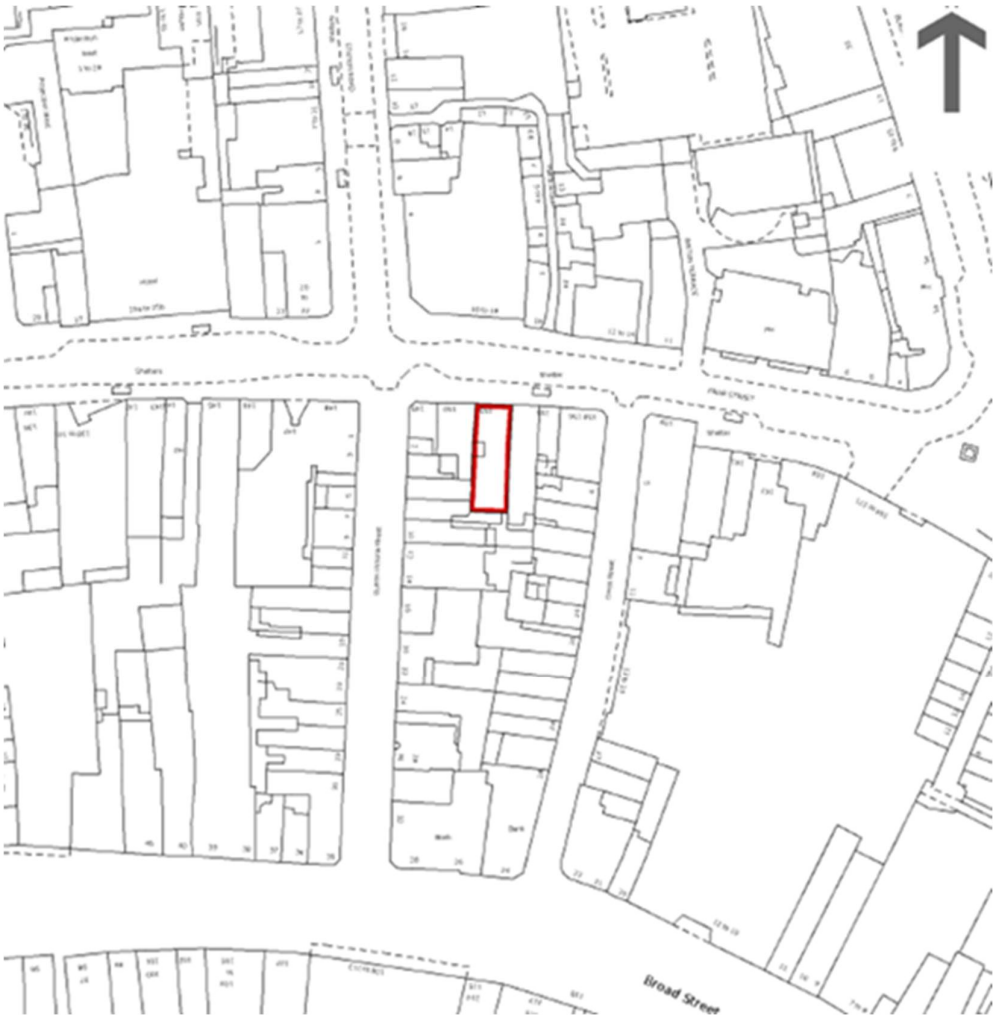
Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: https://www.groundsure.com/terms-and-conditions-jan-2020/.

From: Yacklin Panza <YacklinPanza@hydrock.com>
Sent: 18 August 2022 09:20
To: Environmental Protection <Environment.ProtectionTeam@reading.gov.uk>
Subject: FW: 153 Friar Street,Reading - Desk Study Contamination enquiry

This is an EXTERNAL EMAIL. STOP THINK before you CLICK links or OPEN attachments.
Good morning,

We are completing an environmental study for the site is located at 153 Friar Street, Reading. The postcode is RG1 1HE. See red line site boundary below:



The objective of the assessment is to review the potential for contamination at the proposed site and inform any potential geotechnical constraints that may be present. As part of our review, could you please provide comments with respect to the questions below:

1. Are you aware of any potential sources of contamination at or within 250m of the subject site (existing and/or historical)?
2. Does the council hold records of any fuel storage tanks at or within 250m of the subject site (existing and/or historical)?
3. Are there any known existing or historical landfilling activities associated with or within 250m of the subject site?
4. Are there any historical planning records associated with the subject site?
5. Are you aware of any other information that may be relevant to our assessment?

We understand that there may be a charge associated with our enquiry, if so please provide the relevant information for us to facilitate payment.

Many thanks,

Yacklin Panza
Geo Environmental Consultant

Hydrock
White Building, 1-4 Cumberland Place, Southampton, Hampshire, SO15 2NP
Tel: +44 (0)2382 140 907 Mob: 07570 952 262
hydrock.com

Eight consecutive years in the '100 Best Large Companies to Work For' listing.

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