CITYGAS

CITY GAS PTE LTD (as Trustee)

Commercial & Industrial Division

Understanding Final Pressure Test of Gas Installations

Warming hearts in the city

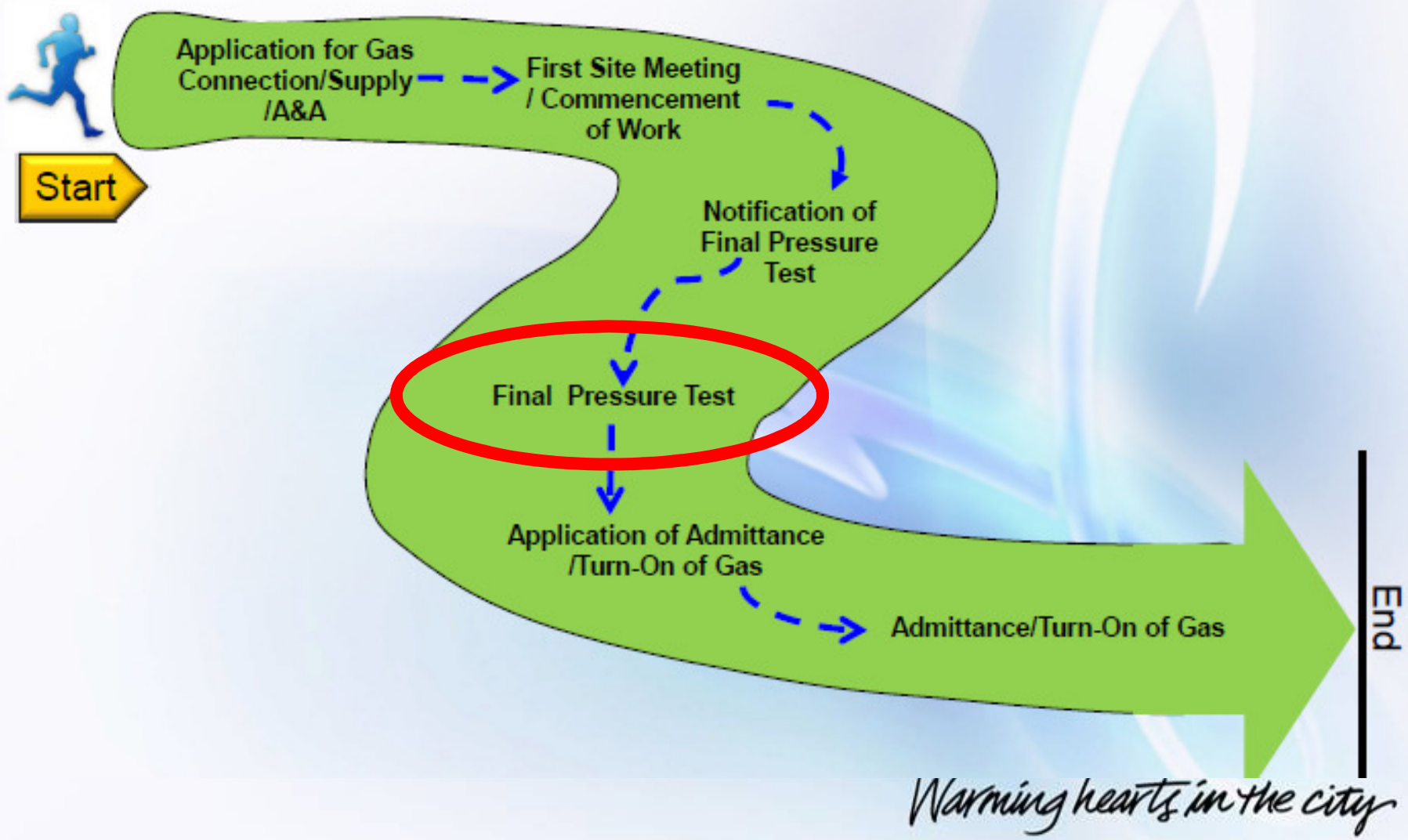
Understanding Final Pressure Testing of Gas Installations





Warming hearts in the city

Understanding Final Pressure Testing of Gas Installations



Understanding Final Pressure Testing of Gas Installations

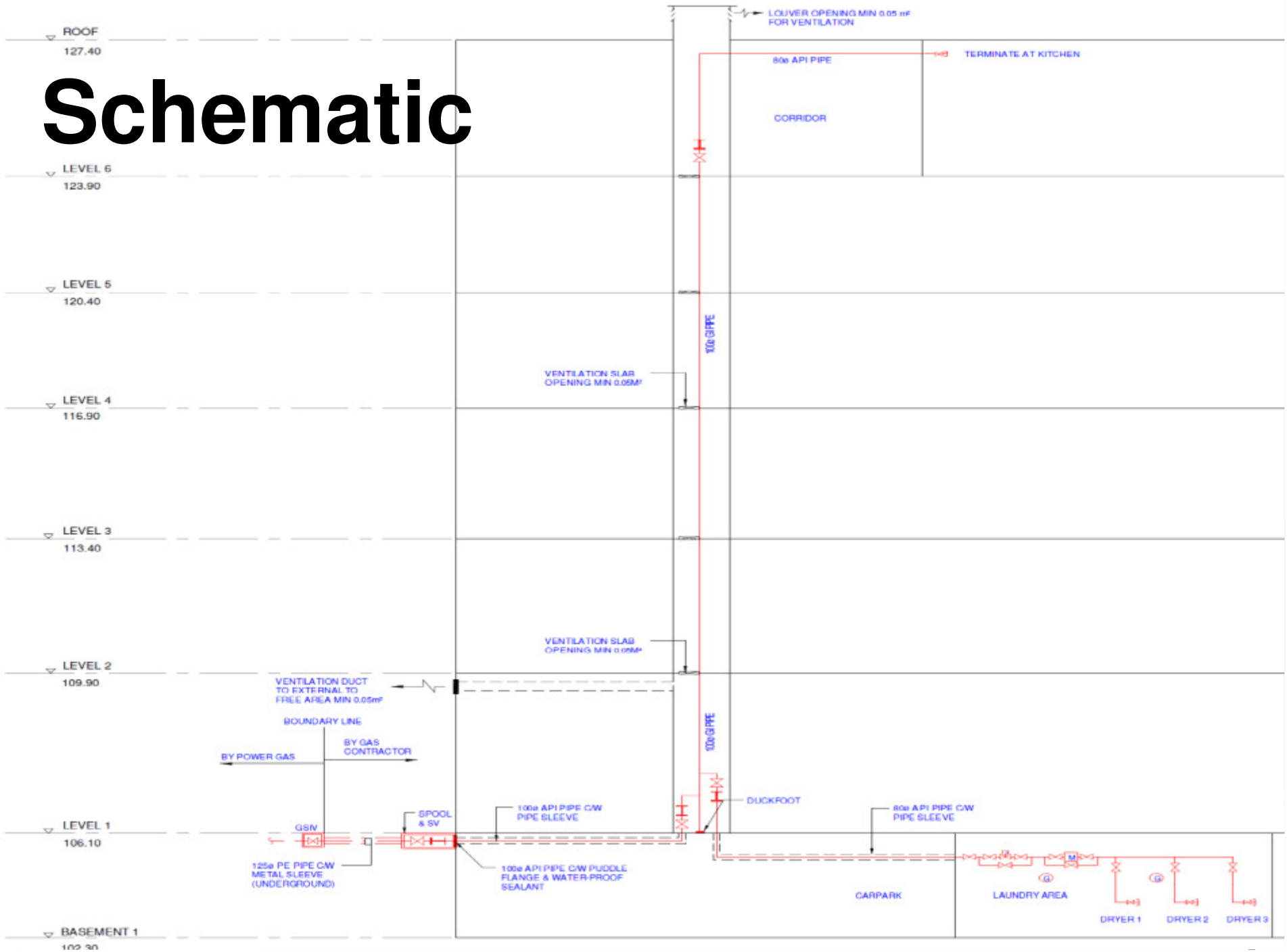
1. General requirements of pressure tests
2. Final inspection and preparation prior to test
3. Submission for final pressure test
4. Testing procedure for service pipe & internal pipe

Warming hearts in the city

1 General requirements of pressure tests

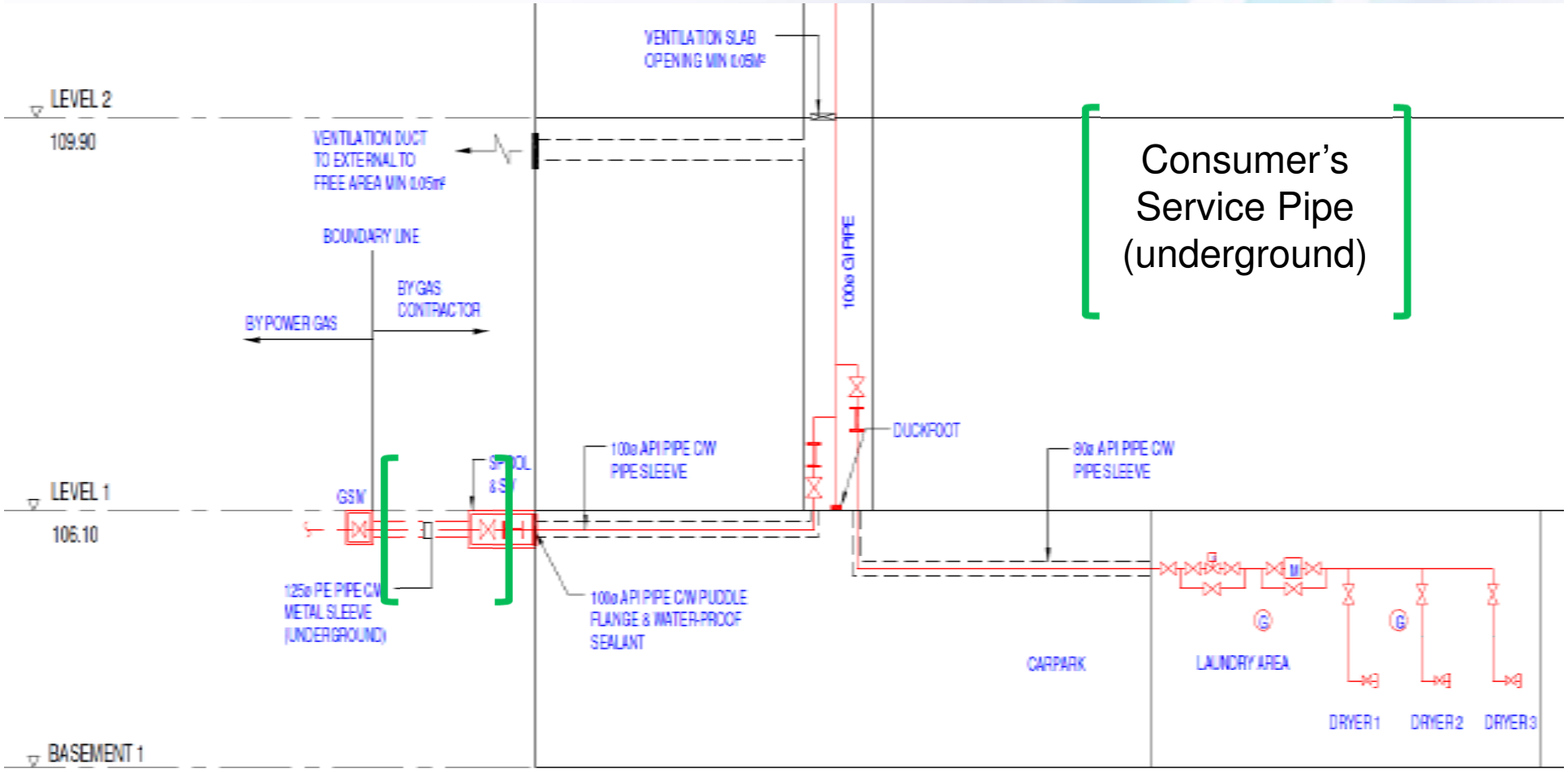
Boundaries

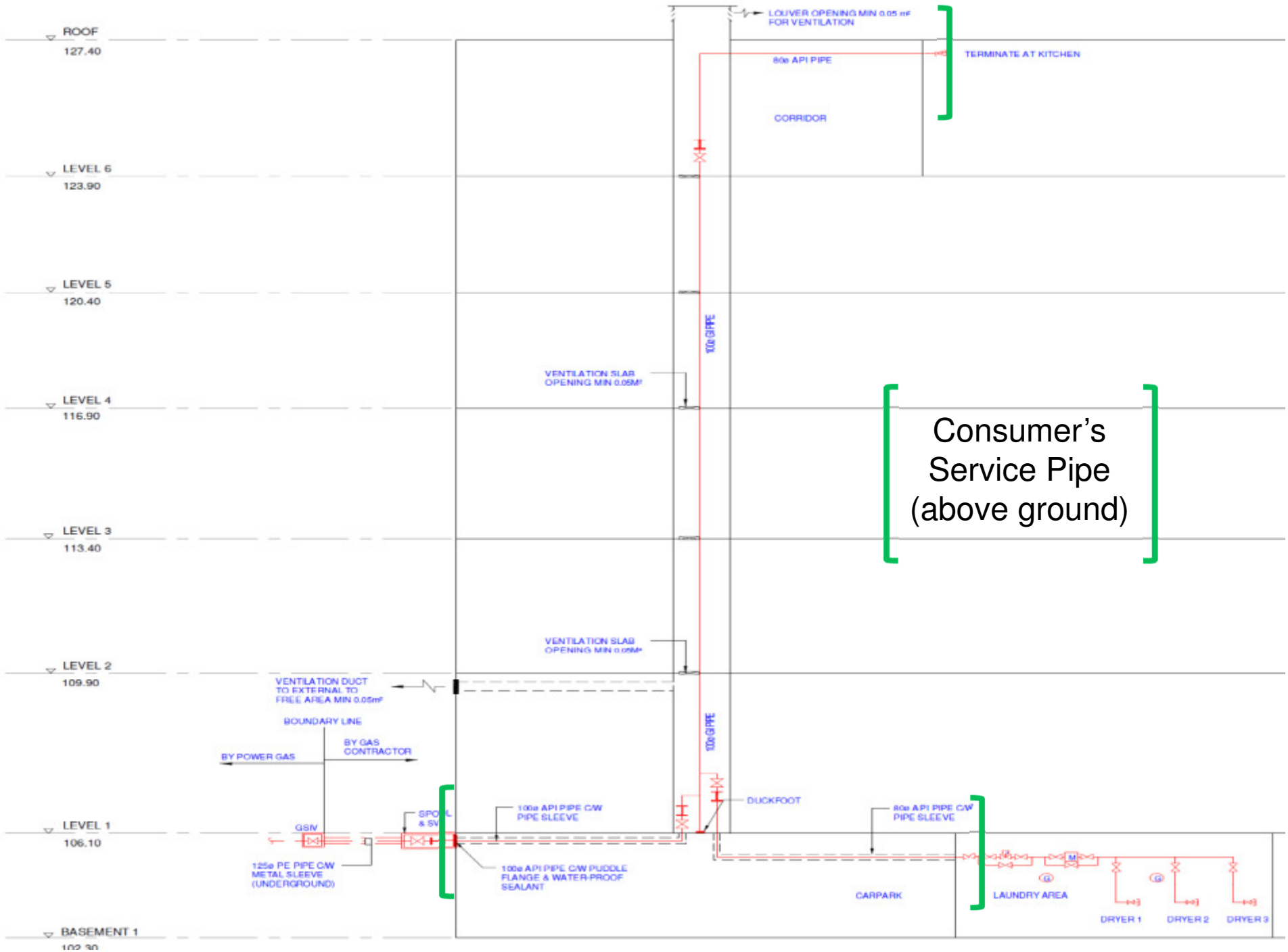
Schematic


ROOF
127.40
LEVEL 6
123.90
LEVEL 5
120.40
LEVEL 4
116.90
LEVEL 3
113.40
LEVEL 2
109.90
LEVEL 1
106.10
BASEMENT 1
LOUVER OPENING MIN 0.05 m² FOR VENTILATION
80ø API PIPE
TERMINATE AT KITCHEN
CORRIDOR
100ø GI PIPE
VENTILATION SLAB OPENING MIN 0.05M²
VENTILATION SLAB OPENING MIN 0.05M²
100ø GI PIPE
VENTILATION DUCT TO EXTERNAL TO FREE AREA MIN 0.05m²
BOUNDARY LINE
BY POWER GAS
BY GAS CONTRACTOR
GSIV
SPOOL & SV
100ø API PIPE C/W PIPE SLEEVE
DUCKFOOT
80ø API PIPE C/W PIPE SLEEVE
125ø PE PIPE C/W METAL SLEEVE (UNDERGROUND)
100ø API PIPE C/W PUDDLE FLANGE & WATER-PROOF SEALANT
CARPARK
LAUNDRY AREA
DRYER 1
DRYER 2
DRYER 3

1 General requirements of pressure tests

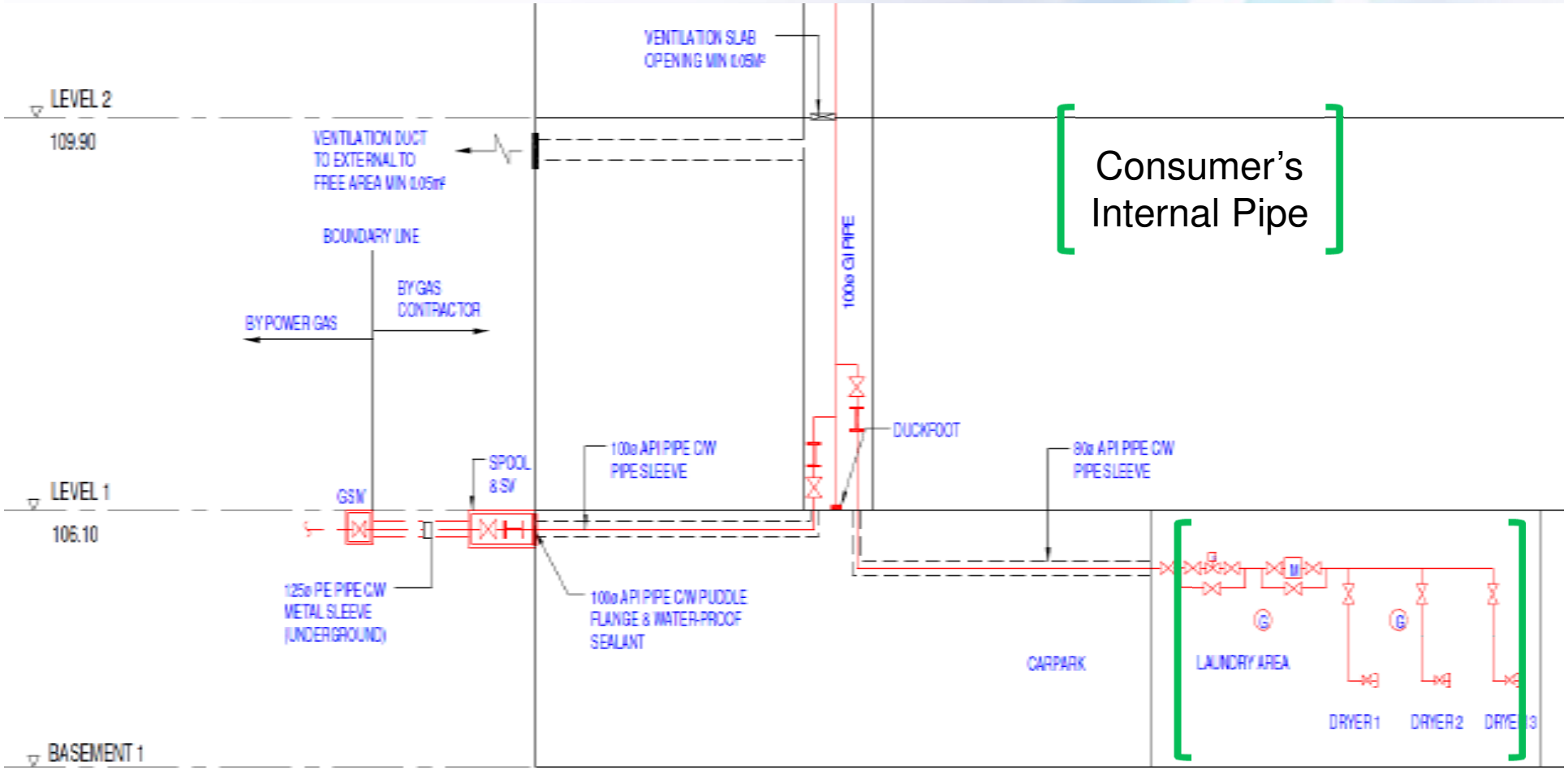
Boundaries




ROOF
127.40
LEVEL 6
123.90
LEVEL 5
120.40
LEVEL 4
116.90
LEVEL 3
113.40
LEVEL 2
109.90
LEVEL 1
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CARPARK
LAUNDRY AREA
DRYER 1
DRYER 2
DRYER 3
Consumer's Service Pipe (above ground)

1 General requirements of pressure tests

Boundaries



1 General requirements of pressure tests

Boundaries

Consumer's Service Pipe

Tested Separately

Consumer's Internal Pipe

1 General requirements of pressure tests

Pressure + Duration

1 General requirements of pressure tests

Pressure + Duration

First Test

Second Test

1 General requirements of pressure tests

Pressure + Duration

Underground

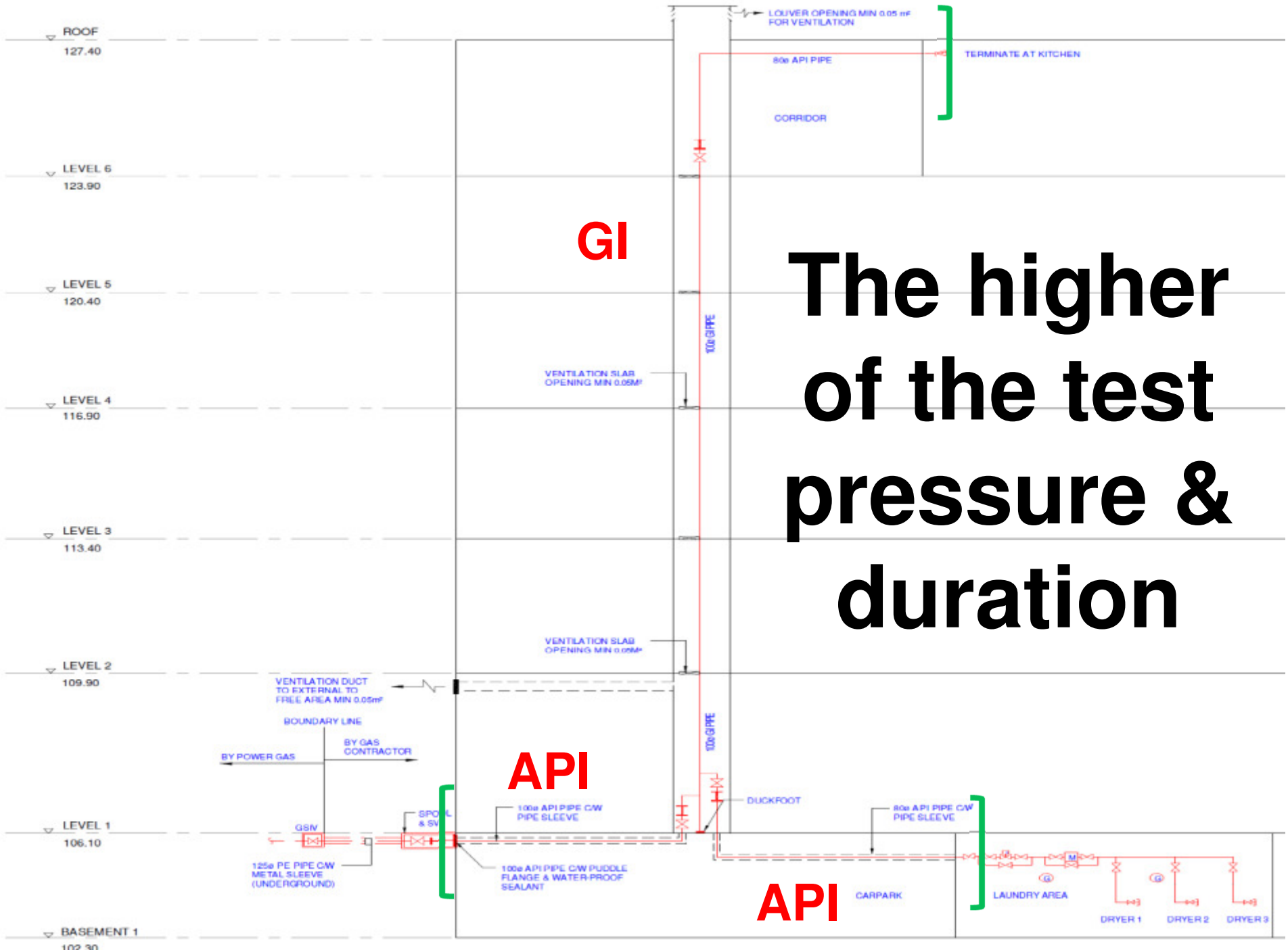
Above ground

1 General requirements of pressure tests

Pressure + Duration

Pipe Material

Type of Pipe	First Test		Second Test	
	Pressure	Duration	Pressure	Duration
Copper/GI	20 kPa	30 min	300 mm wg	10 min
API	70 kPa	30 min	300 mm wg	10 min
PE	140 kPa	24 h	NA	NA
DI	140 kPa	24 h	NA	NA



The higher of the test pressure & duration

1 General requirements of pressure tests

Pressure + Duration



1 General requirements of pressure tests

Medium

1 General requirements of pressure tests

Medium

Air

Nitrogen

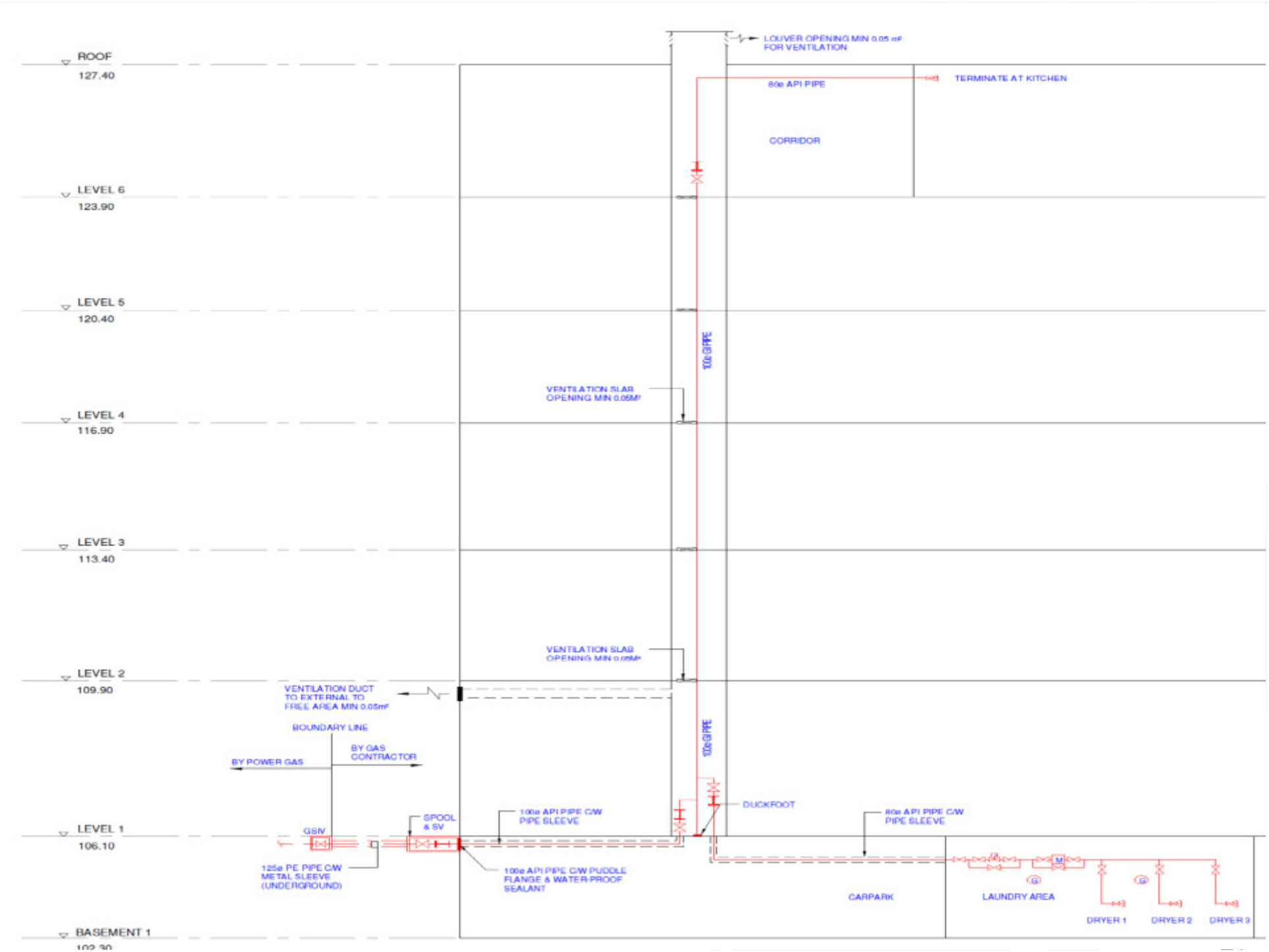
Understanding Final Pressure Testing of Gas Installations

1. General requirements of pressure tests
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Warming hearts in the city

2 Final inspection and preparation prior to test

Final Inspection


ROOF
127.40
LEVEL 6
123.90
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120.40
LEVEL 4
116.90
LEVEL 3
113.40
LEVEL 2
109.90
LEVEL 1
106.10
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100ø GI PIPE
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100ø GI PIPE
VENTILATION DUCT TO EXTERNAL TO FREE AREA MIN 0.05m²
BOUNDARY LINE
BY POWER GAS
BY GAS CONTRACTOR
GSIV
SPOOL & SV
100ø API PIPE C/W PIPE SLEEVE
DUCKFOOT
80ø API PIPE C/W PIPE SLEEVE
125ø PE PIPE C/W METAL SLEEVE (UNDERGROUND)
100ø API PIPE C/W PUDDLE FLANGE & WATER-PROOF SEALANT
CARPARK
LAUNDRY AREA
DRYER 1
DRYER 2
DRYER 3

2 Final inspection and preparation prior to test

Final Inspection





Final connection location

2 Final inspection and preparation prior to test

Final Inspection



Service valve & spool chamber



2 Final inspection and preparation prior to test

Final Inspection



Exposed PE pipes



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2 Final inspection and preparation prior to test

Final Inspection

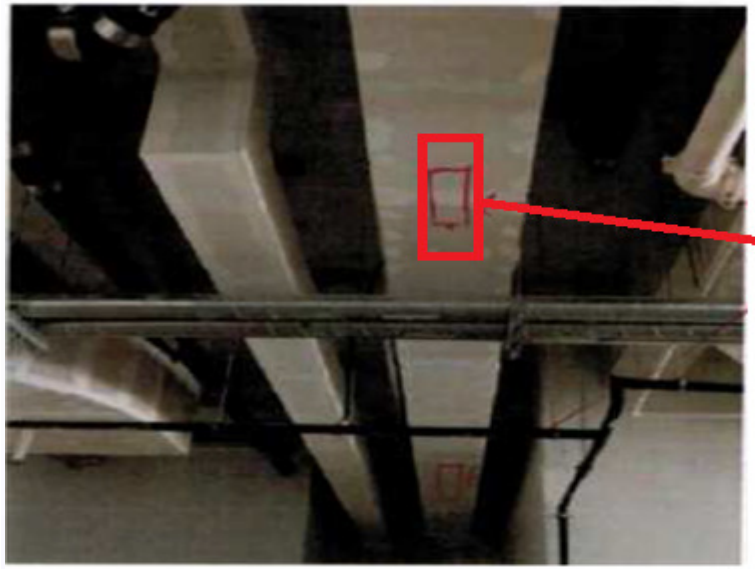




Painting and labelling

2 Final inspection and preparation prior to test

Final Inspection

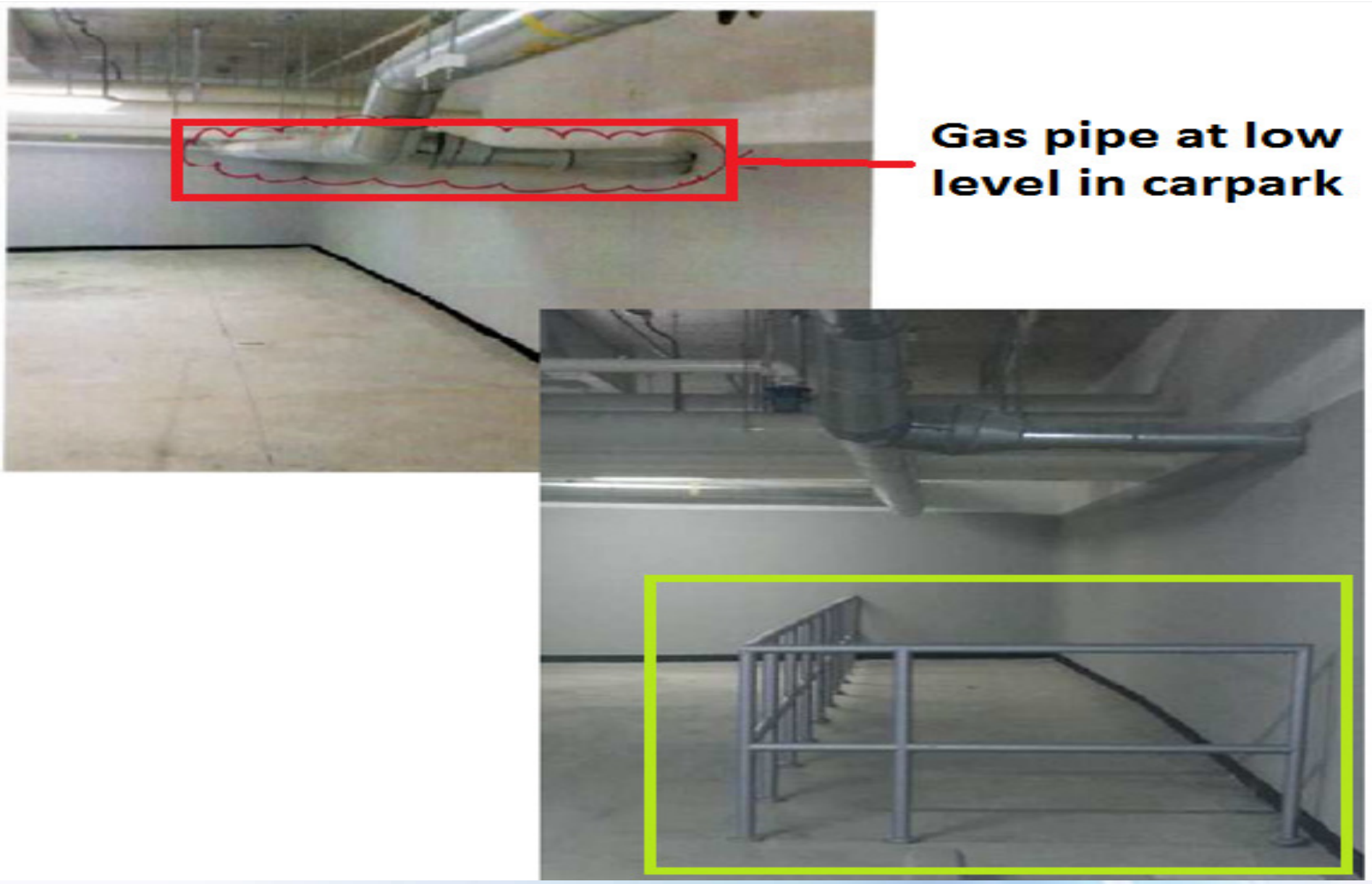


Missing labelling on gas vent ducts



Painting and labelling

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Protection of gas pipe

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2 Final inspection and preparation prior to test

Final Inspection



Gas shaft

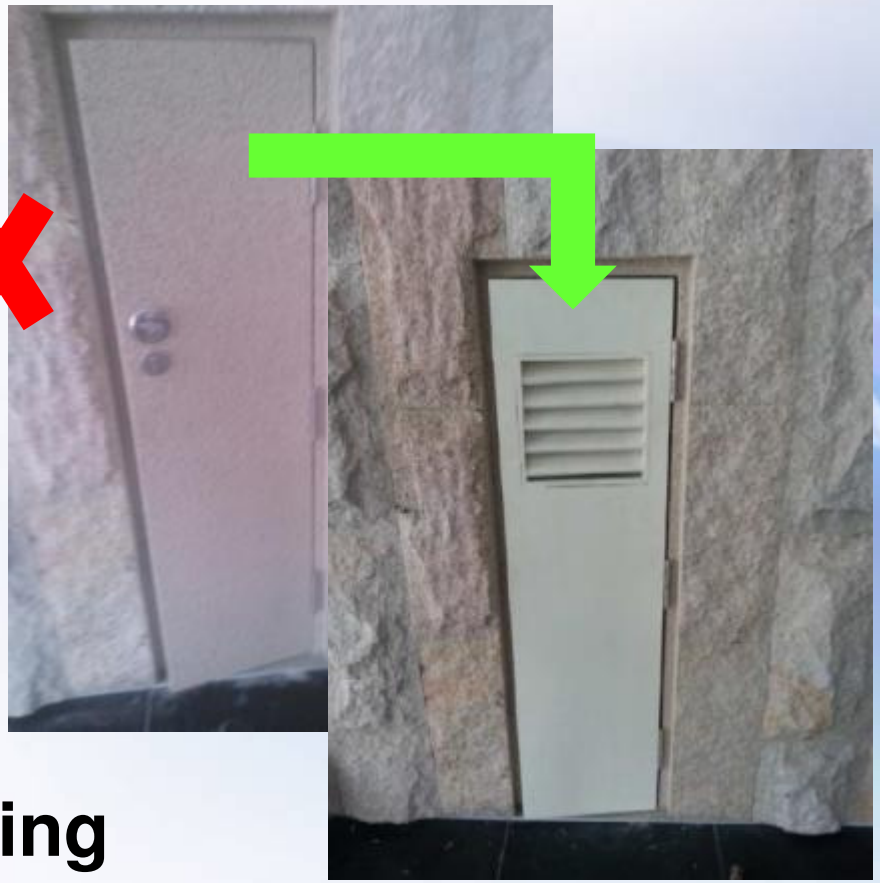


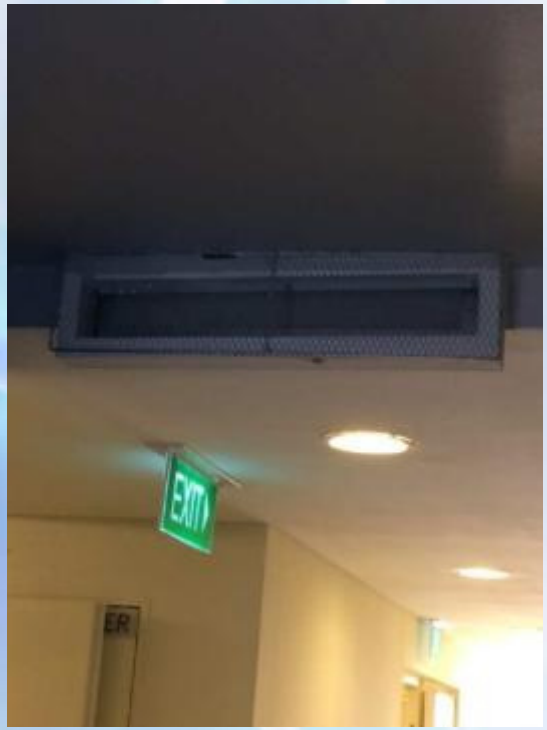


Warming hearts in the city

2 Final inspection and preparation prior to test

Final Inspection



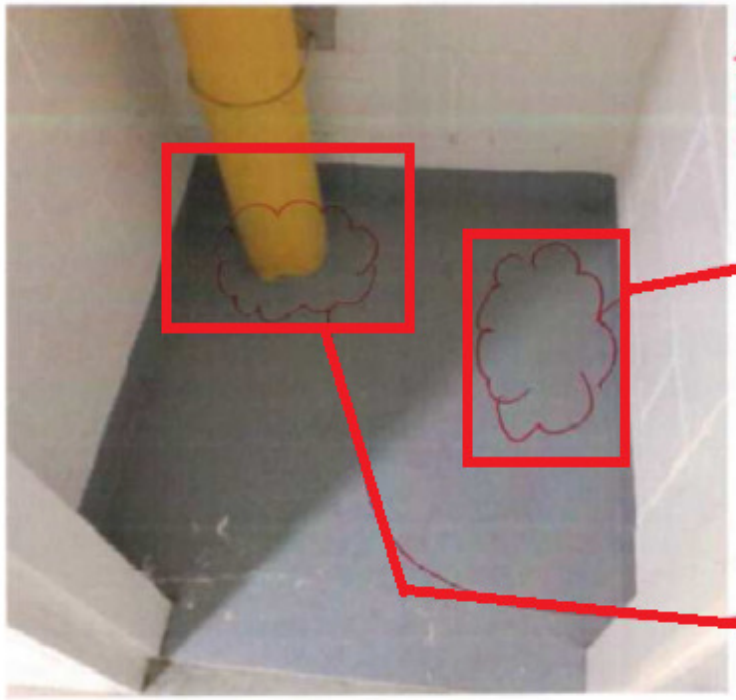


Venting

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2 Final inspection and preparation prior to test

Final Inspection





Venting

2 Final inspection and preparation prior to test

Final Inspection



Vent opening too small.

Minimum 0.05m2 free area must be achieved.



Venting

Warming hearts in the city

2 Final inspection and preparation prior to test

Final Inspection

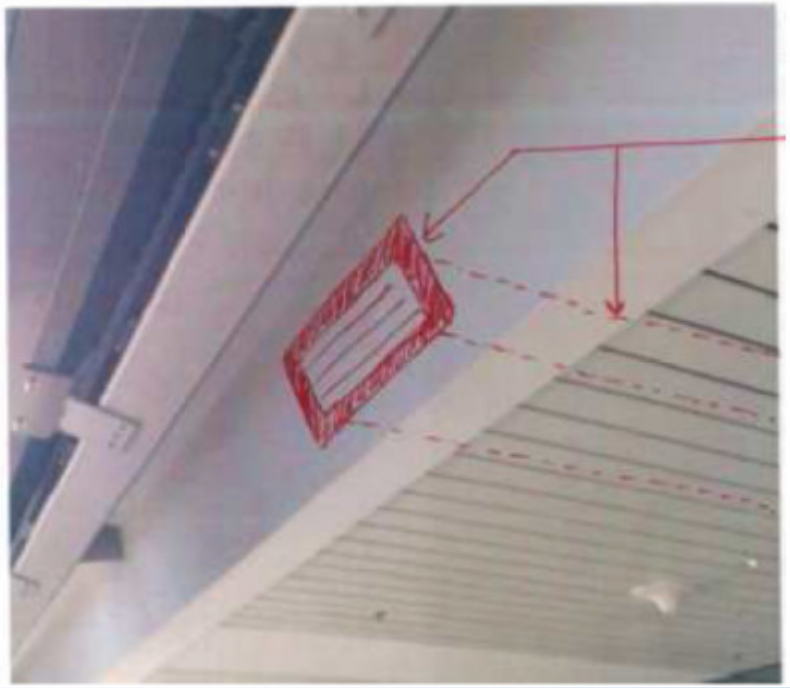




Venting

2 Final inspection and preparation prior to test

Final Inspection



Gas vent duct should terminate at building external



Venting

2 Final inspection and preparation prior to test

Preparation

2 Final inspection and preparation prior to test

Preparation

Non-compliance
Defect list
Inspection comments

2 Final inspection and preparation prior to test

Preparation

Resources

2 Final inspection and preparation prior to test

Preparation

Access to all end points

2 Final inspection and preparation prior to test

Preparation

Self-test

Understanding Final Pressure Testing of Gas Installations

1. General requirements of pressure tests
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3 Submission for final pressure test

Must have

3 Submission for final pressure test

Must have

Application forms

3 Submission for final pressure test

Must have

Application forms

X incomplete

X wrong details

3 Submission for final pressure test

Must have

As-built drawings – 2 sets

3 Submission for final pressure test

Must have

As-built drawings – 2 sets

X inconsistent

X deviations

3 Submission for final pressure test

If Applicable

PE pipe fusion report + conformity letter for underground pipe

3 Submission for final pressure test

If Applicable

NDT report

3 Submission for final pressure test

If Applicable

NDT report

X does not tally

X wrong details

3 Submission for final pressure test

If Applicable

Gas equipment conformity letter

3 Submission for final pressure test

If Applicable

Gas equipment conformity letter

X wrong address

X wrong details

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Understanding Final Pressure Testing of Gas Installations

1. General requirements of pressure tests
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4. Testing procedure for service pipe & internal pipe

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4 Testing procedure for service pipe & internal pipe

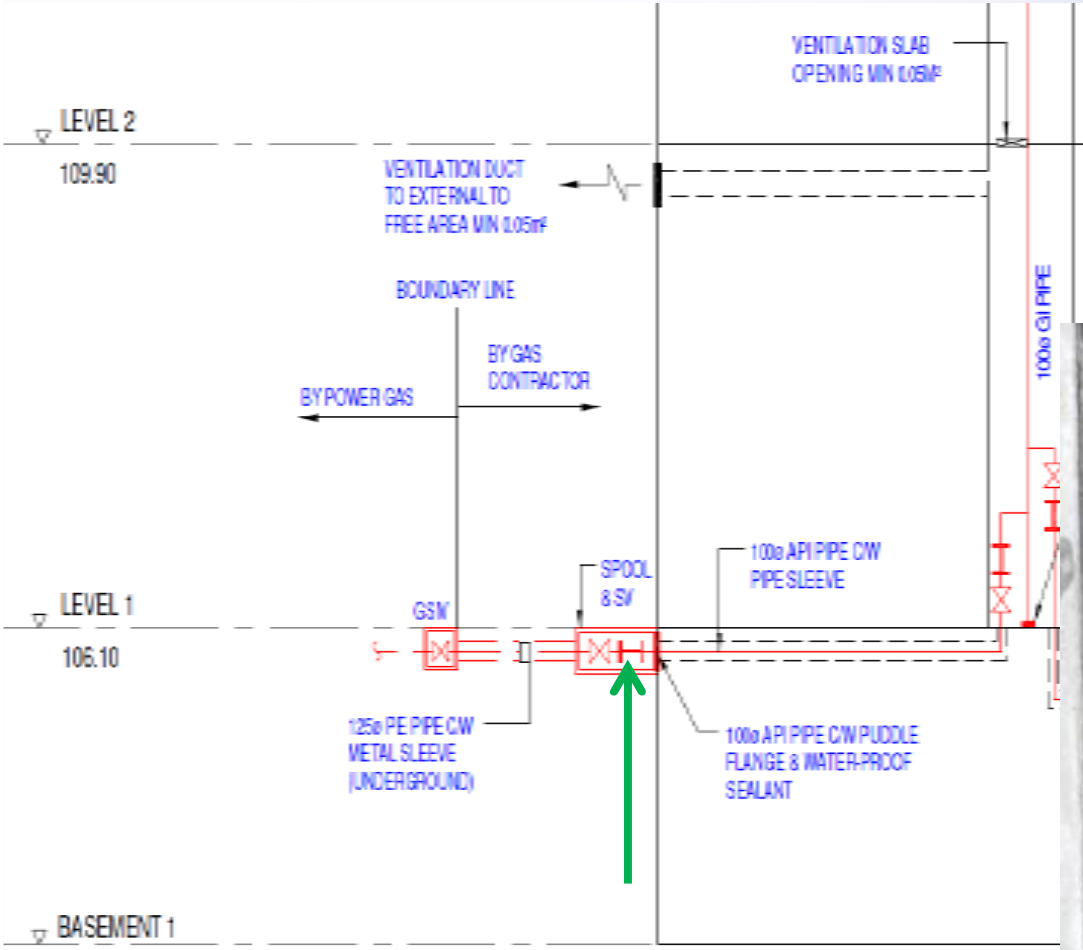
Consumer's Service Pipe



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4 Testing procedure for service pipe & internal pipe

Consumer's Service Pipe

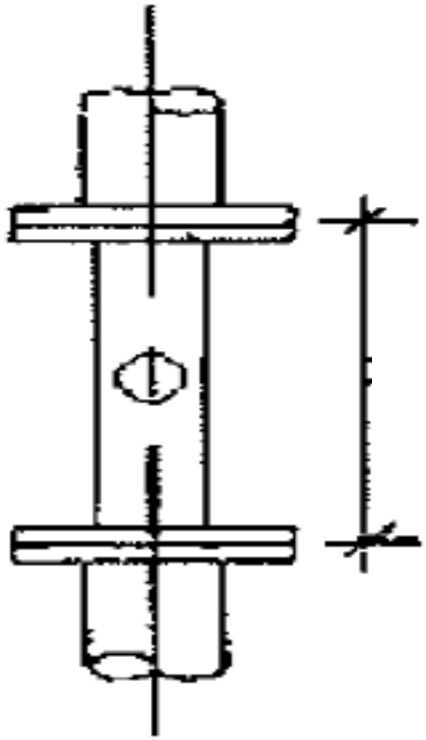


Spool



4 Testing procedure for service pipe & internal pipe

Consumer's Service Pipe



Spool

4 Testing procedure for service pipe & internal pipe

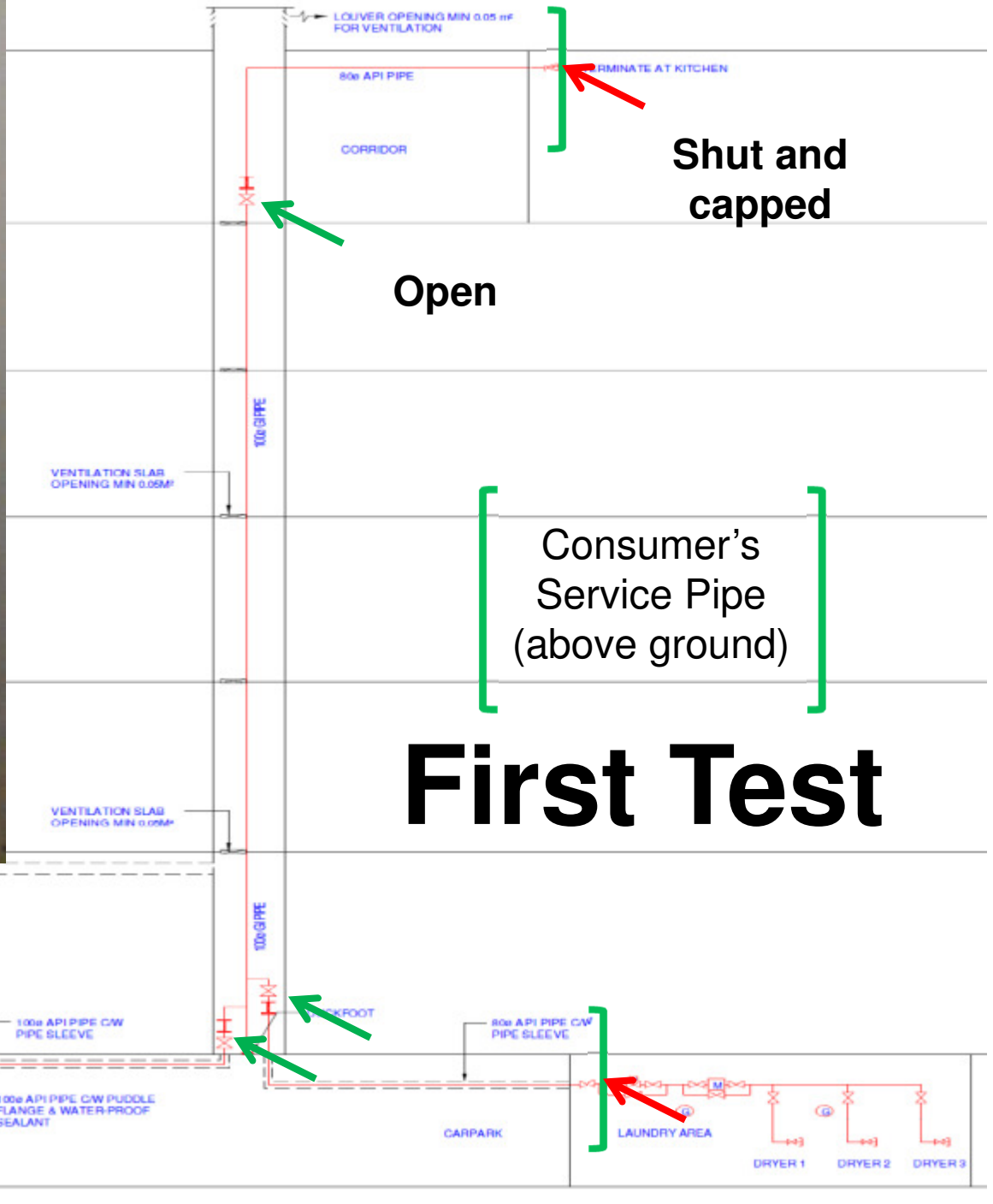
Consumer's Service Pipe

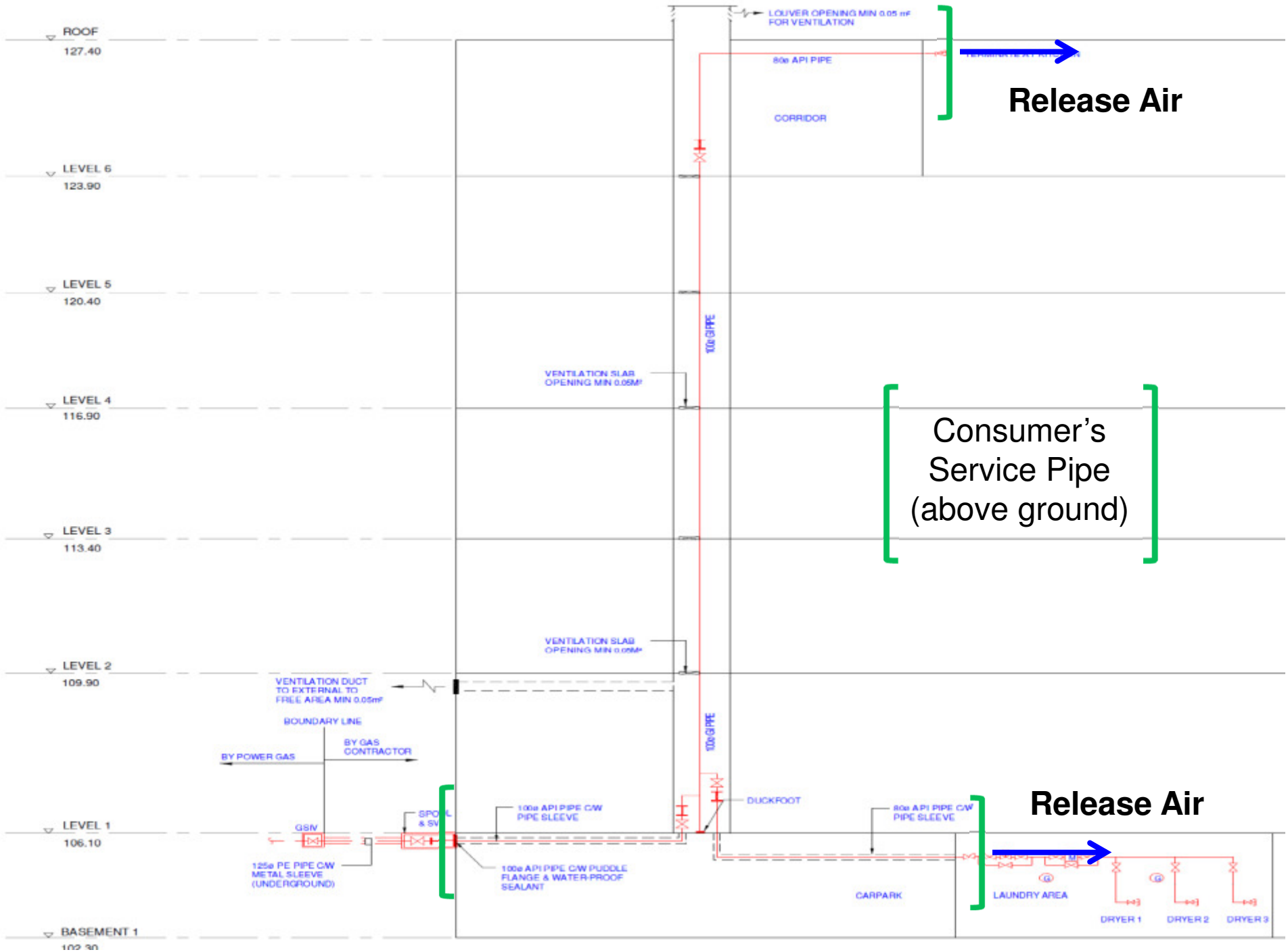


Consumer's Service Pipe (underground)

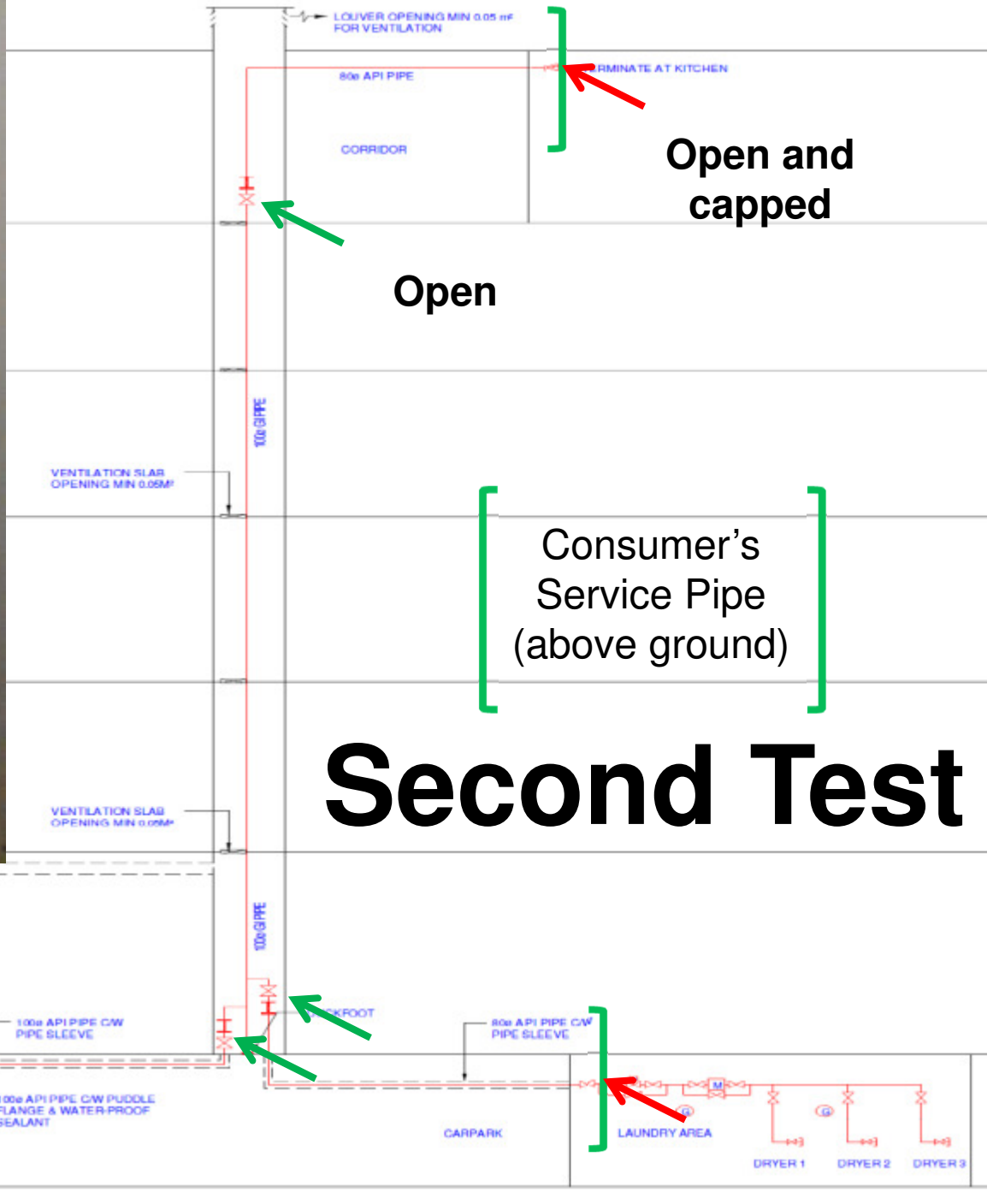
LEVEL 2
109.90
VENTILATION DUCT TO EXTERNAL TO FREE AREA MIN 0.05m²
BOUNDARY LINE
BY GAS CONTRACTOR
BY POWER GAS
LEVEL 1
106.10
GSV
125ø PE PIPE C/W METAL SLEEVE (UNDERGROUND)
90ø API PIPE C/W PIPE SLEEVE
LAUNDRY AREA
DRYER 1
DRYER 2
DRYER 3
BASEMENT 1




LOUVER OPENING MIN 0.05 m²
FOR VENTILATION
80ø API PIPE
CORRIDOR
Shut and
capped
Open
100ø GI PIPE
VENTILATION SLAB
OPENING MIN 0.05M²
Consumer's
Service Pipe
(above ground)
First Test
VENTILATION SLAB
OPENING MIN 0.05M²
TO EXTERNAL TO
FREE AREA MIN 0.05m²
BOUNDARY LINE
BY POWER GAS
BY GAS
CONTRACTOR
100ø GI PIPE
LEVEL 1
106.10
GSIV
100ø API PIPE C/W
PIPE SLEEVE
80ø API PIPE C/W
PIPE SLEEVE
125ø PE PIPE C/W
METAL SLEEVE
(UNDERGROUND)
100ø API PIPE C/W PUDDLE
FLANGE & WATER-PROOF
SEALANT
CARPARK
LAUNDRY AREA
DRYER 1
DRYER 2
DRYER 3
BASEMENT 1


ROOF
127.40
LEVEL 6
123.90
LEVEL 5
120.40
LEVEL 4
116.90
LEVEL 3
113.40
LEVEL 2
109.90
LEVEL 1
106.10
BASEMENT 1
LOUVER OPENING MIN 0.05 m² FOR VENTILATION
80ø API PIPE
CORRIDOR
Release Air
100ø GI PIPE
VENTILATION SLAB OPENING MIN 0.05M²
Consumer's Service Pipe (above ground)
VENTILATION DUCT TO EXTERNAL TO FREE AREA MIN 0.05m²
BOUNDARY LINE
BY POWER GAS
BY GAS CONTRACTOR
GSIV
SPOOL & SV
100ø API PIPE C/W PIPE SLEEVE
DUCKFOOT
80ø API PIPE C/W PIPE SLEEVE
Release Air
125ø PE PIPE C/W METAL SLEEVE (UNDERGROUND)
100ø API PIPE C/W PUDDLE FLANGE & WATER-PROOF SEALANT
CARPARK
LAUNDRY AREA
DRYER 1
DRYER 2
DRYER 3




LOUVER OPENING MIN 0.05 m²
FOR VENTILATION
80ø API PIPE
CORRIDOR
Open and
capped
Open
100ø GI PIPE
VENTILATION SLAB
OPENING MIN 0.05M²
Consumer's
Service Pipe
(above ground)
Second Test
VENTILATION SLAB
OPENING MIN 0.05M²
TO EXTERNAL TO
FREE AREA MIN 0.05m²
BOUNDARY LINE
BY POWER GAS
BY GAS
CONTRACTOR
LEVEL 1
106.10
GSIV
125ø PE PIPE C/W
METAL SLEEVE
(UNDERGROUND)
100ø API PIPE C/W
PIPE SLEEVE
100ø API PIPE C/W PUDDLE
FLANGE & WATER-PROOF
SEALANT
80ø API PIPE C/W
PIPE SLEEVE
CARPARK
LAUNDRY AREA
DRYER 1
DRYER 2
DRYER 3
BASEMENT 1

4 Testing procedure for service pipe & internal pipe

Consumer's Service Pipe



Physical Separation

Pressure Gauge / U-gauge

Access to all end points

Warming hearts in the city

4 Testing procedure for service pipe & internal pipe

Consumer's Internal Pipe



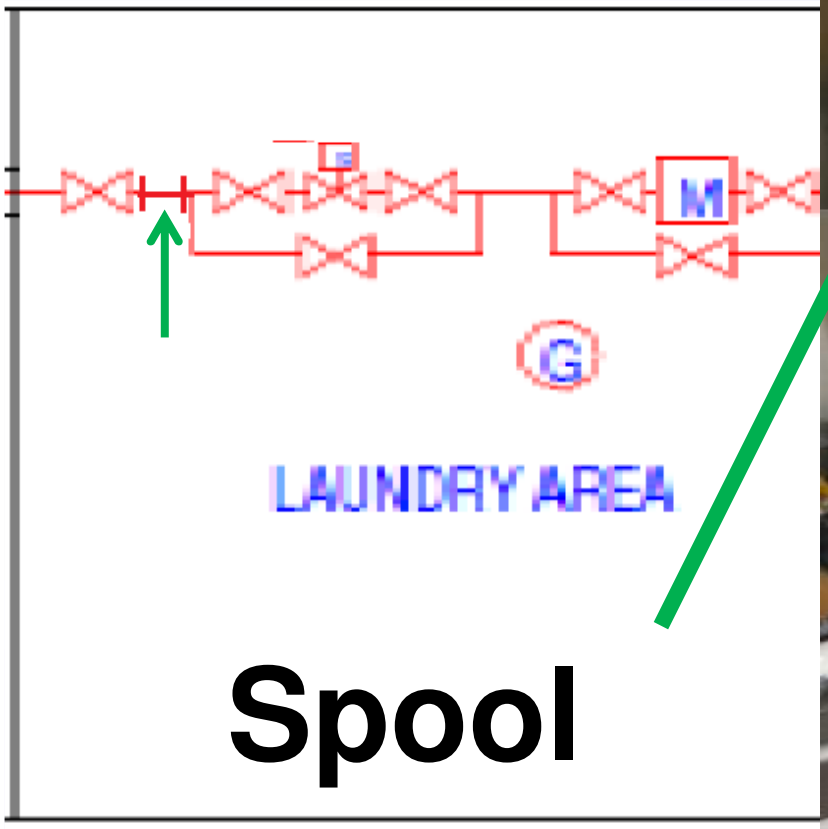
Warming hearts in the city

CITYGAS

Un

4 Testing procedure fo

Consumer's I

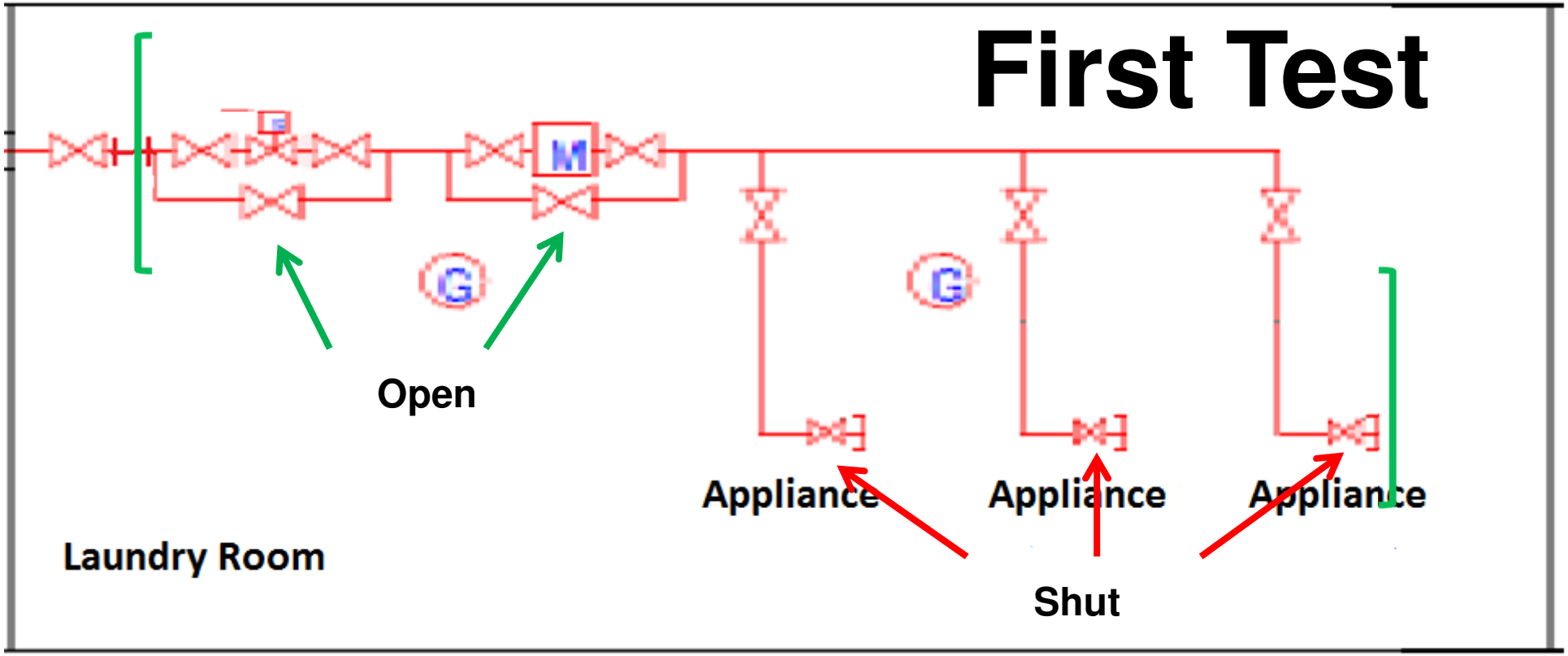


Spool



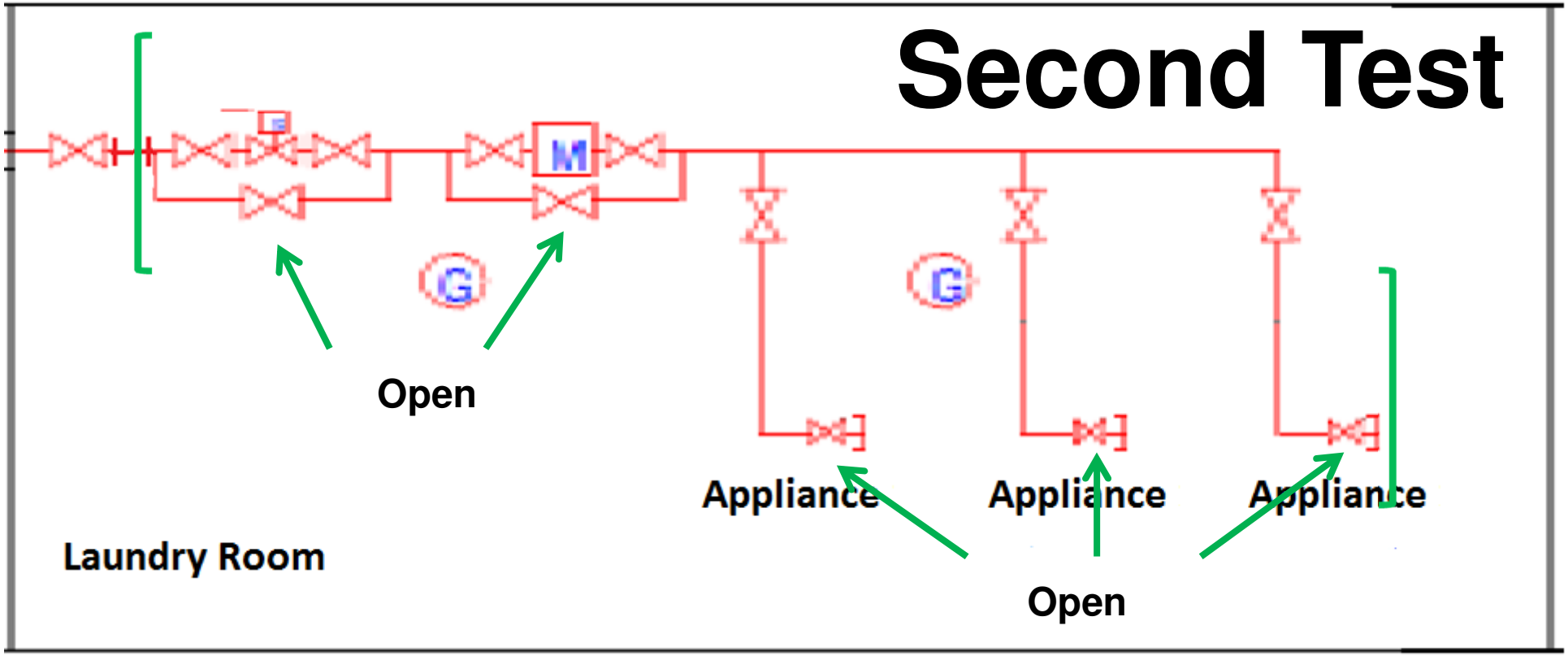
4 Testing procedure for service pipe & internal pipe

Consumer's Internal Pipe



4 Testing procedure for service pipe & internal pipe

Consumer's Internal Pipe



4 Testing procedure for service pipe & internal pipe

Consumer's Internal Pipe



Pressure insertion point

Solenoid valve

Meter allowable pressure

Warming hearts in the city


Power Gas Ltd.
FM1616135
0 0 0 0 0 1,0 1/8
m3
2016
Qmax 25 m³/h V 5 dm³ Klasse 1,5 M2 E2
tm = -25°C..55°C
Qmin 0,16 m³/h Qt 0,5 m³/h pmax 0,5 bar
EN 1359/A1:2006
DVGW-Reg.-Nr.:NG-4701BQ04 09
1trc ≙ 0,1 m³
DE-07-MI002-PTB013
CE M16 0102
Itron
ACD-G16 c
II 2 G c IIC T5
5798015

4 Testing procedure for service pipe & internal pipe



All end points are shut off and capped

“Yellow” Sticker

Sign off

Warming hearts in the city

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Warming hearts in the city

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Thank you!

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