MP 1.4 – Building over or near relevant infrastructure

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1 Purpose
To ensure building work for a building or structure on a lot that contains, or is adjacent to a lot that contains, relevant infrastructure is carried out so—
(a) it does not adversely affect the operation of the infrastructure or place any load on it; and
(b) when completed, it:
   (i) does not prevent the relevant service provider from gaining access to the infrastructure for the purpose of inspecting, maintaining or replacing the infrastructure; and
   (ii) allows any gas that builds up in the infrastructure to escape in a way that ensures individuals in close proximity to a maintenance cover for the infrastructure are not harmed by the gas.

2 Commencement
This Part of the Queensland Development Code (this Part) was published on 2 December 2013 and commences on 13 December 2013.

3 Application
(1) This Part applies to building work for a building or structure proposed to be carried out on a lot that contains, or is adjacent to a lot that contains, relevant infrastructure, as indicated in table 1.
(2) However, this Part does not apply to the building work—
   (a) if the relevant infrastructure is located within an easement registered in the Queensland Land Registry in favour of the relevant service provider; or
   (b) if it is self-assessable building work for a structure that, when completed, will not be supported by continuous concrete footings; or
   (c) if—
      (i) it is for a class 2, 3, 4, 5, 6, 7, 8 or 9 building; and
      (ii) when the building work is completed, all parts of the building will be located at least 10m away from the vertical plane along the centreline of the relevant infrastructure; or

Example—
See Figure 1

(d) if it—
   (i) is for an alteration or repair of an existing building or structure; and
   (ii) will not—
      (A) increase the size of the floor area of the building or structure; or
(B) affect the existing footing system or substructure of the building or structure.

Table 1

<table>
<thead>
<tr>
<th>Application</th>
<th>Performance criteria applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building work is proposed to be carried out on a lot and relevant infrastructure is located on the lot.</td>
<td>P1 and P2</td>
</tr>
<tr>
<td>Building work is proposed to be carried out on a lot (the subject lot) and relevant infrastructure is located on a lot adjacent to the subject lot, but not on the subject lot itself.</td>
<td>P1</td>
</tr>
<tr>
<td>Building work is proposed to be carried out on a lot (the subject lot) and relevant infrastructure is located on both the subject lot and a lot adjacent to it.</td>
<td>For the relevant infrastructure on the subject lot—P1 and P2 For the relevant infrastructure on the adjacent lot—P1</td>
</tr>
</tbody>
</table>

4 Referral agency

The Sustainable Planning Regulation 2009, schedule 7, table 1, item 27A applies to a building development application for building work on a lot that contains, or is adjacent to a lot that contains, a relevant service provider’s infrastructure if—

(a) the application does not comply with the acceptable solutions set out in this Part; or

(b) there are no relevant acceptable solutions for the application.

In such a case the application must be referred to the relevant service provider so it may exercise jurisdiction as a concurrence agency for the application.

5 Compliance with the QDC

Under section 14 of the Building Act, building work complies with the QDC only if it complies with all relevant performance criteria under the QDC. The building work complies with a relevant performance criteria only if it achieves a relevant building solution under the QDC for the performance criteria. This can be achieved by—

(a) complying with the relevant acceptable solution for the performance criteria; or
(b) formulating an alternative solution that complies with the performance criteria or is shown to be at least equivalent to the relevant acceptable solution; or

(c) a combination of paragraphs (a) and (b).

Notes—
1 Figures 2 -11 provide examples of how to achieve the acceptable solutions for the performance criteria set out in this Part, P1 and P2.

2 The acceptable solutions set out in this Part are relevant to building work for a class 1 building, or a class 10 building or structure, but are not relevant to building work for a class 2, 3, 4, 5, 6, 7, 8 or 9 building. Therefore, compliance with P1 or P2 for such building work can only be achieved by formulating an alternative solution for the relevant performance criteria.

3 A building development application involving an alternative solution (other than an alternative solution for a combined sanitary drain) for P1 or P2 must be referred to a concurrence agency for assessment against the relevant performance criteria.

6 Associated requirements

- AS/NZS 3500 (Set): 2003 – Plumbing and Drainage Set
- Building Act 1975
- Building Regulation 2006
- Local Government Act 2009
- National Construction Code
- Plumbing and Drainage Act 2002
- Professional Engineers Act 2002
- South-East Queensland Water (Distribution and Retail Restructuring) Act 2009
- Standard Plumbing and Drainage Regulation 2003
- Sustainable Planning Act 2009
- Sustainable Planning Regulation 2009
- Water Supply (Safety and Reliability) Act 2008

7 Definitions

Note—
Italicised words, other than some legislation titles, included in this Part are defined below.

acceptable solution see the Building Act, section 14.

alternative solution see the Building Act, schedule 2.

angle of repose means the steepest angle of descent or dip of the slope relative to the horizontal plane when material on the slope face is on the verge of sliding.
Note—
The angle of repose for the zone of influence of a building or structure is determined based on the type of soil present where the building or structure is located. Generally, the assessment manager for a building development application will determine the angle to be 30 degrees for cohesionless soil and 45 degrees for other types of soil (measured from the horizontal plane). The appropriate angle should be used when designing any footings for a building or structure located over or near relevant infrastructure.

Examples—
See Figures 2, 3 and 11.

assessment manager see the Building Act, section 11.

building see the Building Act, schedule 2.

Note—
building includes a building of any class. See also the definition of structure.

Building Act means the Building Act 1975.

building development application see the Building Act, section 6.

building work see the Building Act, section 5.

centreline, of relevant infrastructure, means a notional line running through the centre of the infrastructure along its length.

class, for a building or structure, see the Building Act, schedule 2.

clear zone, for relevant infrastructure, means a three dimensional space, free of—
(a) overhanging parts of a building or structure; and
(b) other objects that would impede access to the relevant infrastructure required by the relevant service provider for the purpose of inspecting, maintaining or replacing the infrastructure, as required.

Examples—
See Figures 9A, 9B and 10.

cohesionless soil means any free-running type of soil, such as sand or gravel, whose soil strength relies on friction between particles.

combined sanitary drain see the Standard Plumbing and Drainage Regulation 2003, schedule 6.

connection point see the Standard Plumbing and Drainage Regulation 2003, schedule 6.

DN means nominal diameter.
**fill** means material used to backfill a trench or build up the level of land above the original surface level before building work commences.

**gravity wall** means a retaining wall that relies on its mass to resist pressure from behind the wall.

Example—
A boulder wall.

**invert level**, for a pipe, means the lowest point of the internal surface of the pipe at any cross-section of the pipe.

Example—
See Figures 2, 3, 10 and 11.

**load bearing element**, of a building or structure, means an element of the building or structure intended to resist vertical or horizontal (including lateral) forces additional to those due to its own weight.

**maintenance cover**, for relevant infrastructure, means a cover, whether above, at, or below ground level, for a chamber through which a person, machine or device may gain access to the relevant infrastructure, for the purpose of inspecting, maintaining or replacing the infrastructure.

**outermost projection** means the outermost part of a building or structure including, in the case of a roof, the outside face of the fascia, or the roof structure where there is no fascia, or attached sunhoods or the like, but does not include retractable blinds, fixed screens, rainwater fittings, or ornamental attachments.

**pressure pipeline** means a pipeline that is designed to operate predominantly under pressure, whether imposed by pumping or gravity, at pipe-full flow.

Example—
A sewer rising main.

Note—
Pipelines known as ‘non-pressure pipelines’ are designed to operate predominantly in part-full flow conditions and therefore do not fall within the definition of pressure pipeline, even though they may operate under pressure at certain times. An example of a non-pressure pipeline is a surcharged stormwater drain.

**Queensland Development Code (QDC)** see the Building Act, section 13.

**relevant infrastructure** means any of the following—

(a) a sewer operated by or for a sewerage service provider;

(b) a water main operated by or for a water service provider;

(c) a stormwater drain operated by or for a local government;
(d) a combined sanitary drain.

Note— Relevant infrastructure ceases at the connection point.

**relevant service provider** means—
(a) for a sewer—the sewerage service provider for the sewer; or
(b) for a water main—the water service provider for the water main; or
(c) for a stormwater drain—the owner of the stormwater drain.

Note—

**RPEQ** means a registered professional engineer under the Professional Engineers Act 2002.

**sanitary drainage** see the *Plumbing and Drainage Act*, schedule.

**self-assessable building work** see the *Building Act*, section 21(3).

**sewer** means—
(a) a sewer under the *Plumbing and Drainage Act 2002*; and
(b) any maintenance cover for the sewer.

**sewerage service provider** see the *Water Supply (Safety and Reliability) Act 2008*, schedule 3.

**stormwater drain** means—
(a) infrastructure used for receiving, storing, transporting or treating stormwater; and
(b) any maintenance cover for the infrastructure.

**structure** see the *Building Act*, schedule 2.

**vertical plane along the centreline**, for relevant infrastructure, means a notional two dimensional vertical plane extending upwards and downwards through the centreline of the infrastructure.

**water main** means—
(a) infrastructure used for transporting water other than stormwater; and
(b) any maintenance cover for the infrastructure.
**water service provider** see the *Water Supply (Safety and Reliability) Act 2008*, schedule 3.

**zone of influence**, of a building or structure, the subject of a building development application, means the area determined by the assessment manager to be loaded by the footings or other load bearing elements of the building or structure taking into account the angle of repose.

Example—

See Figures 2, 3 and 11.
Ensuring building work does not damage relevant infrastructure

P1 Building work for a building or structure on a lot that contains, or is adjacent to a lot that contains, relevant infrastructure does not—

(a) adversely affect the operation of the relevant infrastructure; or

(b) place any load on the relevant infrastructure.

A1 (1) The requirements set out in subsection (2) apply for building work for a building or structure on a lot that contains, or is adjacent to a lot that contains, relevant infrastructure that is—

(a) a sewer with a DN not more than 225mm that is not a pressure pipeline; or

(b) a stormwater drain with a DN not more than 375mm that is not a pressure pipeline; or

(c) a combined sanitary drain.

(2) The requirements are—

(a) the building work is for a class 1 building, or a class 10 building or structure; and

(b) either—

(i) the building or structure is located so the invert level of the relevant infrastructure is at least 300mm above the point of the zone of influence that intersects with the vertical plane along the centreline; or
(ii) the footings of the building or structure are supported on screwed or bored (but not driven) piles or piers that—

(A) are installed at least 1.2m from the vertical plane along the centreline of the relevant infrastructure; and

(B) extend so that the point of the zone of influence of the piles or piers that is closest to the relevant infrastructure is at least 300mm below the invert level of the relevant infrastructure; and

(c) excavation is not carried out within 600mm of the outer wall of the relevant infrastructure; and

(d) compaction by vibration is not carried out within 2m of the vertical plane along the centreline of the relevant infrastructure; and

Example—
See Figure 3.

Example—
See Figure 4.
PART 1.4 – BUILDING OVER OR NEAR RELEVANT INFRASTRUCTURE

PERFORMANCE CRITERIA

ACCEPTABLE SOLUTIONS

Example—
See Figure 5.

(e)  either—

(i) use of fill for the building work, does not result in over 1m of fill being placed over relevant infrastructure; or

Example—
See Figure 6.

(ii) if over 1m of fill is associated with a retaining wall—the relevant infrastructure is bridged over via a design certified by an RPEQ that complies with all other relevant requirements set out in subsection A1(2).

Example—
See Figure 7.

Note—
Reliance on A1(2)(e)(ii) for achieving compliance with P1 will prevent reliance on A2 for achieving compliance with P2, and an alternative solution for P2 will be required.
PART 1.4 – BUILDING OVER OR NEAR RELEVANT INFRASTRUCTURE

PERFORMANCE CRITERIA

Maintaining access to and ventilation for relevant infrastructure

P2 When completed, building work for a building or structure on a lot that contains relevant infrastructure, allows—

(a) the relevant service provider to gain access to the relevant infrastructure for the purpose of inspecting, maintaining or replacing the relevant infrastructure; and

(b) any gas that builds up in the relevant infrastructure to escape in a way that ensures individuals in close proximity to the maintenance cover for the infrastructure are not harmed by the gas.

ACCEPTABLE SOLUTIONS

A2 (1) The requirements set out in subsection (2) apply to completed building work for a building or structure on a lot that contains relevant infrastructure that is—

(a) a sewer or water main with a DN not more than 225mm; or

(b) a stormwater drain with a DN not more than 375mm.

(2) The requirements are—

(a) the building work is for a class 1 building, or a class 10 building or structure; and

(b) a wall, footing, pile, pier or floor of the building or structure is installed at least 1.2m from the vertical plane along the centreline of the relevant infrastructure; and

Example—

See Figure 8.

(c) for any part of the relevant infrastructure other than a maintenance cover, a clear zone having the following dimensions is maintained—
**PERFORMANCE CRITERIA**

**ACCEPTABLE SOLUTIONS**

(i) a minimum width of 1.5m along the horizontal plane that intersects the *vertical plane along the centreline* of the *relevant infrastructure*; and

(ii) a height of 2.4m from the finished surface level; and

(iii) a length the same as the length of the *relevant infrastructure*; and

Examples—

See Figures 9A and 9B.

(d) for any *maintenance cover*—

(i) a *clear zone* having the following dimensions is maintained—

(A) a circular base with a radius of 1.5m along the horizontal plane from the centre of the cover at finished surface level; and

(B) an infinite height from the finished surface level; and

(ii) access to the *clear zone* for the cover is not impeded by
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PERFORMANCE CRITERIA

ACCEPTABLE SOLUTIONS

(iii) the building or structure does not cause ponding on the upper surface of the cover (because the building or structure allows water to drain away naturally); and

(iv) the cover is not covered by fill associated with the building work; and

Example—

See Figure 10.

(e) for any gravity wall over 1m high—

(i) the wall is constructed so the invert level of the relevant infrastructure is at least 300mm above the point of the zone of influence that intersects with the vertical plane along the centreline; or

Example—

See Figure 11.

(ii) the design of the wall is certified by
<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>ACCEPTABLE SOLUTIONS</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>an RPEQ to be appropriate taking into account the safety of workers who will inspect, maintain or replace the relevant infrastructure, as required.</td>
</tr>
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</table>
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Class 2, 3, 4, 5, 6, 7, 8 or 9 building

Vertical plane along the centreline

Sewer, water main, stormwater drain or combined sanitary drain

Figure 1
Example for section 3(2)(c)
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Figure 2
Example for A1(2)(b)(i)

(The zone of influence is determined based on the angle of repose ($x^0$ in the figure). The angle of repose is determined based on the type of soil present where the building or structure is located.)
Figure 3
Example for A1(2)(b)(ii)

(The zone of influence is determined based on the angle of repose ($x^\circ$ in the figure). The angle of repose is determined based on the type of soil present where the building or structure is located.)
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Retaining wall
Dwelling or other structure
600mm
Footing
Bored pile or pier
Sewer, stormwater drain or combined sanitary drain
Excavation cannot occur within the area around the infrastructure

Figure 4
Example for A1(2)(c)
Figure 5
Example for A1(2)(d)
Figure 6
Example for A1(2)(e)(i)
Figure 7
Example for A1(2)(e)(ii)

Note—
The bridging design must be certified by an RPEQ.
Figure 8
Example for A2(2)(b)
Figure 9A

Example for A2(2)(c)
(Two dimensional diagram)
Figure 9B

Example for A2(2)(c)
(Three dimensional diagram)
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Figure 10
Example for A2(2)(d)
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Gravity wall

Dwelling or other structure

Sewer, water main or stormwater drain

Invert level

Zone of influence

(The zone of influence is determined based on the angle of repose ($x^\circ$ in the figure). The angle of repose is determined based on the type of soil present where the building or structure is located.)

Figure 11
Example for A2(2)(e)(i)

Note: This scenario would not require an RPEQ certification.
### Version history

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<th>Version</th>
<th>Publication date</th>
<th>Commencement date</th>
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<tbody>
<tr>
<td>1.1</td>
<td>2 December 2013</td>
<td>13 December 2013</td>
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