



**Building and Development Tribunals**

**Queensland Government**

Department of **Local Government and Planning**

**APPEAL**

*Integrated Planning Act 1997*

**File No. 3-03-061**

## **BUILDING AND DEVELOPMENT TRIBUNAL - DECISION**

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**Building Certifier:** Gold Coast Building Certification Group

**Site Address:** 2685-2689 Gold Coast Highway and 70-72 Surf Parade Broadbeach

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### **Nature of Appeal**

Appeal against the decision of the Gold Coast Building Certification Group that the water supply to the sprinkler system is not a Grade 1 water supply as required by Part E1. 5 and Specification E1.5 of the Building Code of Australia -Volume 1.

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**Date and Place of Hearing:** 2:00 pm on Friday 31 October 2003 at Level 25 Mineral House, 41 George Street Brisbane.

**Tribunal:** David Kay - Tribunal Chairperson  
Chris Odgers - Tribunal member

### **Present:**

Bradley Ashcroft – Cameron Chisholm and Nicol.	Steven Spurr- Enterprise Fire
Keith Thomas – Thomas Independent Certification	Tim Blinco – Enterprise Fire
Warwick Barnett – Fire Consultant	Darryl Wright –Boulderstone Hornibrook
Michael Doyle – Gold Coast City Council	

### **Decision**

The decision of Gold Coast Building Certification Group relating to the Grade of water supply in paragraph 3 and clauses i-iv of the letter dated 30 September 2003 for Building Application No. 22/15358 is **set aside** and is replaced by the following decision.

The valving arrangement is: –

- A Grade 2 supply if the water supply authority requires the valve/s located between the two branch connections to the premises to be in the open position or
- A Grade 1 Supply if the water supply authority permits the valve/s located between the two branch connections to remain closed at all times.

### **Background**

*Applicants submissions to the tribunal.*

Keith Thomas advised that the proposal was for a 21 storey residential building which is fully sprinkler protected as required by the BCA. The applicant has been advised by the building certifier that the water supply to the sprinkler system is not a Grade 1 supply. Keith Thomas then addressed the Tribunal and explained the detail contained in his written submission dated 23 October 2003 lodged with the appeal. Details of the reliability of water supplies for sprinkler protected buildings were submitted.

Keith Thomas concluded by stating that he considered there were 3 questions to be answered.

Do the proposed arrangements constitute a grade 1 supply?

What is the role of the building certifier?

An ancillary question as to what is the risk of the sprinkler system not having a water supply?

Warwick Barnett outlined the background that a Grade 1 water supply traditionally applied by insurers was to have a dual water supply.

There are 3 tests he would apply.

Is a supply available from 2 town mains? Insurance Council of Australia maps show Gold Coast and Brisbane as having a high degree of reliability. The interconnection of the system seems a certainty with independent connections separated by two mains service stop valves. They are potentially separated by the intervention of an operator closing the necessary valves.

Are 2 mains in the one trench? In this case no, so this does not present a problem.

Are the 2 mains on opposite sides? In this case yes, as they come from opposite sides separated by the stop valves.

The 1999 code has a standby for a secondary source. The Gold coast City Council water supply is divided into districts. When one district has a failure it can be interconnected but the interconnection requires some one to turn valves on for the interconnection.

The Standards required a 95% record of maintenance of the water supply. This would mean supply would not be available for 5% of the year. This equates to 430 hours when supply would not be available.

The design has 2 connection points to the town mains. The 2 supplies are also not interconnected on the premises.

There is a water storage source greater than 1ML in each district. There are in the order of 75 reservoirs in the system. The main is capable of providing the required supply of 1700l/min to the towers. This supply is available unboosted.

*Gold Coast Building Certification Group submission to the tribunal.*

Mike Doyle advised that the application was for a 21 storey building that was approved with conditions and was accompanied by a Form 15 certification for the design of the fire hydrant and sprinkler system. Subsequent documentation was received on the hydrant and sprinkler system.

Following this the building certifier for the Gold Coast Building Certification Group determined that the supply was not a Grade 1 water supply.

The Gold Coast City Council Water authority advised by 2 letters dated 15 July and 30 July that the supply was not considered to meet the requirements for a Grade 1 supply.

An earlier letter dated 15 March from Gold Coast Water advised that the water supply may be a Grade 1 supply

The building is more than 25 metres high and requires a sprinkler system under Part E1.5 of the BCA. Specification E1.5 of the BCA clause 2 lists the relevant standards as AS2118.1 and AS2118.6. The system does not comply with the standard because of the arrangement of the stop valves. The design proposed is not unlike what is shown as a Grade 2 supply in the Standard.

Clause 2 of Specification E1.5 of the BCA requires a Grade 1 supply.

In response to a question from Tribunal member Chris Odgers as to why the Gold Coast Water letters differed it was advised that the initial letter said it may comply, not that it does comply.

***Further responses from parties attending the hearing***

Darryl Wright, on behalf the builder, submitted that there were changes in the Standard between 1995 and 2000.

The system must have valves closed between different zones and these valves needed to be turned on and that continuity of supply does not mean “continual” supply all the time but means following. The system may not be flowing all the time and that there could be a time lapse during which the valves are arranged to provide supply.

The builder obtained expert advice from a professional engineer and this design is a result of this expert advice. There are precedents for buildings in this area using this system. The Gold Coast City Council Water Authority has given different advice.

The question was raised as to what “operative” means?

Keith Thomas advised that in his view operative does not mean at all times .The town main consists of a system of stop valves **so arranged** to provide a second source of supply.

Tribunal member David Kay questioned that with this system of having to operate valves on the town mains the alternate supply may have a break of supply but the time to re-establish supply could be different from that where tanks or another alternate source is available on site. It was also questioned as to whether the supply is to be permanently arranged to have supply from two mains or the capability of being arranged to provide alternate supply.

Keith Thomas submitted that there is a degree of time if there is a break down. The supply is not required 100% of the time because the code would say 100% of the time if it meant that to occur. He also asked the Tribunal to consider that compliance with the BCA and standards is a matter for the building certifier and not the role of the Water Authority.

Mike Doyle commented that the only system that has continuity of supply is 2 town mains.

Warwick Barnett commented that continuity of supply after breakdown is a “reasonable” time to rectify valve arrangement. It should be noted that for 5 years buildings have been connected using this system as DTS. How many existing buildings are there like this?

In response to a question from Tribunal member David Kay it was advised that the system is to be designed for a hydrant supply of 1200l/m and sprinkler supply of 500 l/m with a total supply of 1700 l/m.

**Material Considered**

- Decision dated 30 September issued by the Gold Coast Certification Group advising that the water supply is not considered to be a Grade 1 water supply.
- Material submitted by applicant with the appeal notice to the Tribunal.
- Material submitted by applicant and agents at Tribunal hearing.
- Material submitted by Gold Coast Building Certifier M Doyle at Tribunal hearing.
- Integrated Planning Act 1997.
- Building Act 1975 and Standard Building Regulation 1993.

- Building Code of Australia –Volume1.
- AS 2118-1999 Automatic Fire Sprinklers Part 1: General requirements.
- AS 2419-1994 Fire Hydrant installations Part1: System design, installation and commissioning.
- Extract of papers presented at Australian Fire Standards Update April 1995 submitted by K Thomas.

### **Findings of Fact**

- A building approval for building having a multiple classification of 2, 6 and 7 comprising 21 storeys above ground level with 3 basement levels of car parking below ground level was approved with conditions by Gold Coast Building Certification Group.
- Details relating to the proposed water supply system for the fire hydrant main and sprinkler main connection was submitted on 3 July 2003 for the Gold Coast Building Certification Group to consider as a deemed to satisfy application.
- The application was decided by letter dated 30 September where the Gold Coast Building Certification Group Principal Building Surveyor, Mike Doyle advised that the proposal did not meet deemed to satisfy or performance requirements for a Grade 1 water supply.
- The appeal to a Building and Development Tribunal was lodged within the required time.
- The building has an effective height of more than 25 metres.
- Part E1.5 of the BCA has a requirement for the installation of sprinklers in the building and these are to comply with Specification E1.5 of the BCA.
- The Grade of water supply to a required sprinkler system for a building greater than 25 metres in effective height is a Grade 1 water supply.
- The decision as to whether the water supply is a Grade 1 water supply is a decision under the Integrated Planning Act using the requirements of the Building Act, The Standard Building Regulation, the Building Code of Australia and relevant referenced Australian Standards as a code against which the application must be assessed.
- The assessment manager must accept the decision of the building certifier in relation to compliance with the Building Act.
- The Queensland Fire and Rescue Service is a referral advice agency.
- The Gold Coast Water Authority may be a third party advice agency in relation to the Grade of the water supply but the decision is to be made by the building certifier.

### **Reasons for the Decision**

Specification E1.5 of the BCA requires that a Grade 1 water supply be provided to a building having an effective height of more than 25 metres.

Clause 4.1.1 of AS 2118.1 states that “It (water supply) shall be automatic and thoroughly reliable and shall not be subject to either freezing or drought conditions that could seriously deplete the supply.”

Clause 4.2 lists acceptable sources of supply as including town mains, elevated private reservoirs, gravity tanks, automatic pumps drawing from suction tanks or natural sources or boosting town mains, pressure tanks.

Clause 4.3.2.1 specifies a Grade 3 water supply as a direct supply from a single town main or a pressure tank or a single pump drawing from a single town main.

Clause 4.3.3 specifies a Grade 2 water supply as one which requires the premises to be supplied by duplicate (branches) connections from the town main which is to be fed from both end by mains

with a stop valve (open or closed) between the two branches. The mains at each ends shall not be directly dependant on a common trunk main in the town main system and the town main system shall be connected to more than one source.

It also includes an elevated private reservoir or gravity tank or automatic pump supply with 2 or 3 automatic pumps or a pressure tank.

Clause 4.3.4 specifies a Grade 1 Water supply as one connected to duplicate water sources with each source capable of providing the same pressure and rate of flow.

It includes supply from 2 town mains which are independent or form part of an interconnected system with stop valves so arranged that in the event of breakdown anywhere in the system at least one of the mains must remain operative. The premises are to be connected separately from each main.

It also includes a town main and pressure tank, a town main and elevated private reservoir or gravity tank, town main and automatic pump, automatic pump and pressure tank, automatic pump and elevated private reservoir or gravity tank, two elevated private reservoirs or gravity tanks or 2 or 3 automatic pumps from a virtually inexhaustible water supply.

In summary :-

A Grade 3 supply requires water from one source, say a town main.

A Grade 2 water supply requires water supply from a town main with feeds from 2 directions and in the event of a nearby break in the main the valve between branches can be closed to still provide supply to one branch.

A Grade 1 water supply requires to be fed from 2 independent mains. In the event of a nearby break in one main supply is still available from the other main without having to turn a valve

This is further highlighted by a Grade 2 supply being from one elevated private water supply or one elevated tank whereas a Grade 1 water supply must have two elevated private reservoirs or two elevated tanks.

The supply for a Grade 1 supply must be from 2 independent sources. The proposed arrangement does not provide for a second independent source in the event of a break in the main when the street valve/s between the take off branch connections are open.

If the valve between the take off branch connections was permanently closed then it is considered that the feed would be from 2 independent sources/mains and in the event of a break on one side of the main supply to one branch connection would still be available from the other side.

The proposed arrangement could only be considered suitable if the water authority (Gold Coast Water) agreed to the valve between the two branch connections being permanently closed.

The Tribunal also sought clarification from Australian Standards and in consultation with Committee FP/4 of Australian Standards it is considered that the valving arrangement is: –

- A Grade 2 supply if the water supply authority requires the divide valve to be in the open

position; or

- A Grade 1 Supply if the water supply authority permits the valve to remain closed at all times.

In consideration of the submission of “supply being available for 95% of the time” this needs to be taken in context of the particular clause 4.5.3.3 of AS2419.1 which requires the pressure in the town main at the connection point to the hydrant installation which the local water supply authority considers can be maintained for 95% of the time or approves a minimum agreed pressure obtained or calculated from its records. It is considered that this percentile relates to the available pressure in the mains due to pressure variations in the main due to demand on the water supply system, not to the percentile of time in which the town mains are operative due to breakdowns of the town mains system.

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**David Kay**  
**Chairperson**  
**Building and Development Tribunal**  
**Date: 9 December 2003**

**Appeal Rights**

Section 4.1.37. of the Integrated Planning Act 1997 provides that a party to a proceeding decided by a Tribunal may appeal to the Planning and Environment Court against the Tribunal's decision, but only on the ground:

- (a) of error or mistake in law on the part of the Tribunal or
- (b) that the Tribunal had no jurisdiction to make the decision or exceeded its jurisdiction in making the decision.

The appeal must be started within 20 business days after the day notice of the Tribunal's decision is given to the party.

### **Enquiries**

All correspondence should be addressed to:

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Building Codes Queensland  
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