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Dear Ian,

**SUBJECT: ULDA FITZGIBBON DEVELOPMENT – REVIEW OF BULK
EARTHWORKS FOR AREAS C, E, F & G**

As requested by Bruce McArthur from ETS we have reviewed the following design drawings for bulk earthworks in Areas C, E, F and G for the Fitzgibbon development:

ULDEFG C200 P2 – 22/3/2010
ULDEFG C201 P2 – 22/3/2010
ULDEFG C202 P2 – 22/3/2010

We have assumed that the required minimum fill level is based on the Brisbane City Council requirement for residential allotments to be a minimum of 300 mm above the 100 year ARI (Q100) design flood level. We have also assumed that potential flood mitigation works for Cabbage Tree Creek that would reduce flood levels on the site (though included in planning investigations for the UDA) may not be constructed.

Subject to the comments provided below, which may require some minor adjustment to fill levels, the proposed filling is generally compliant with the results of flood investigations undertaken to date for the UDA:

- C200 P2 - The minimum fill level at the southeast corner of the filled area shown on this plan should be 11.45 mAHD at the upstream end of the adjacent channel, and 11.40 mAHD at the downstream end of the channel.
- C200 P2 – We note that the design of the waterway culvert crossing adjacent to the southeast corner of the filled area (box culverts at Ch 590 on dwg. ULDSFG C304 D) indicates that the overflow point for flows exceeding the culvert capacity, with a minimum elevation of about 11 mAHD, is located about 50 m to the north of the culvert. The design of the final landform should ensure that overflows from the waterway, due to events greater than Q100 or substantial culvert blockage, can access this low point with minimal impact on residential allotments.
- C201 P2 – The minimum fill level at the northern limit of the filled area shown on this plan (near the future Roghan Road culvert crossing) should be 10.95 mAHD. The minimum fill level at the western corner of the filled area, adjacent to the Carseldine Drain open space reserve, should be 11.25 mAHD.
- C202 P2 – The minimum fill level for the fill pads shown on this plan should be 10.95 mAHD, increasing to 11.25 mAHD at the upstream (western) end of the site.