

To	APP – David Rann, Stuart Diver MSB – Greg Cole-Clark	Reference number 206014-00/Memo#15
cc	DCM - Wojciech Pluta, Dan Malone, Anne Clisby S2F - Julian Scanlan Arup – Sean McGinn	File reference Memo #15
From	Ashley Willis – Arup	Date 9 <sup>th</sup> December 2009
Subject	HMRI – RC Structural Frame is being designed for worst case MSEC subsidence scenario	

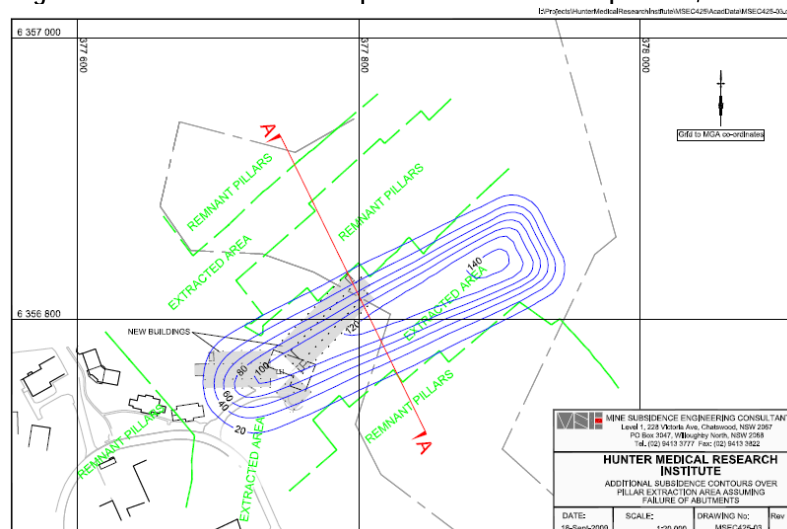
Dear David Rann,

In response to MSB's letter dated 18<sup>th</sup> November 2009 ref FN69-05033N0, Arup would like to confirm that the HMRI RC Frame is being designed to resist the worst case subsidence scenario presented by MSEC - as per table 1 and Fig 1 below. Note that these values are slightly more stringent than Coffey's earlier values.

	Predicted Subsidence Values	
	MSEC	Coffey
Maximum subsidence	120mm	110mm
Maximum tilt	3.9mm/m	3.7mm/m
Surface Strain - Tension	1.55mm/m	0.76mm/m
Surface Strain - Compression	2.4mm/m	1.4mm/m
Tensile Curvature	7.1km	12.6km
Compressive Curvature	4.2km	7.6km

**Table 1 – Design Subsidence values**

Diagrams extracted from MSEC Report No.#2 dated 18<sup>th</sup> September, 2009



**Figure 1 - MSEC worst case subsidence profile affecting the HMRI buildings**

Furthermore, work is being completed to confirm that the worst case depression can exist anywhere over the footprint of the HMRI building, and not only in the location shown on Fig 1.

If you have any further questions, please contact me to discuss,

Regards,

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