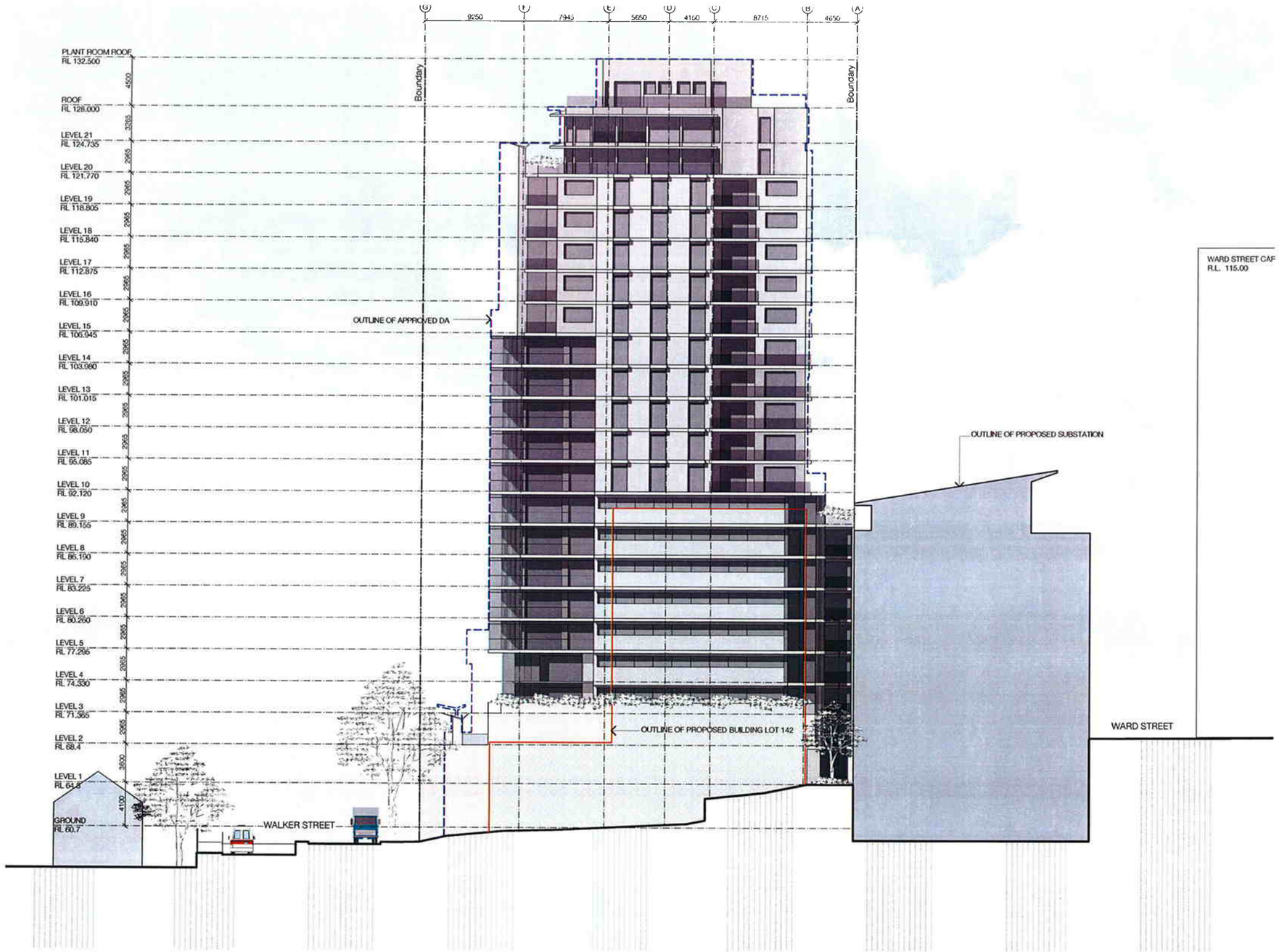

North Elevation

Date: 17/8/10

RESIDENTIAL DEVELOPMENT CONSULTANTS
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WINTEN PROPERTY GROUP

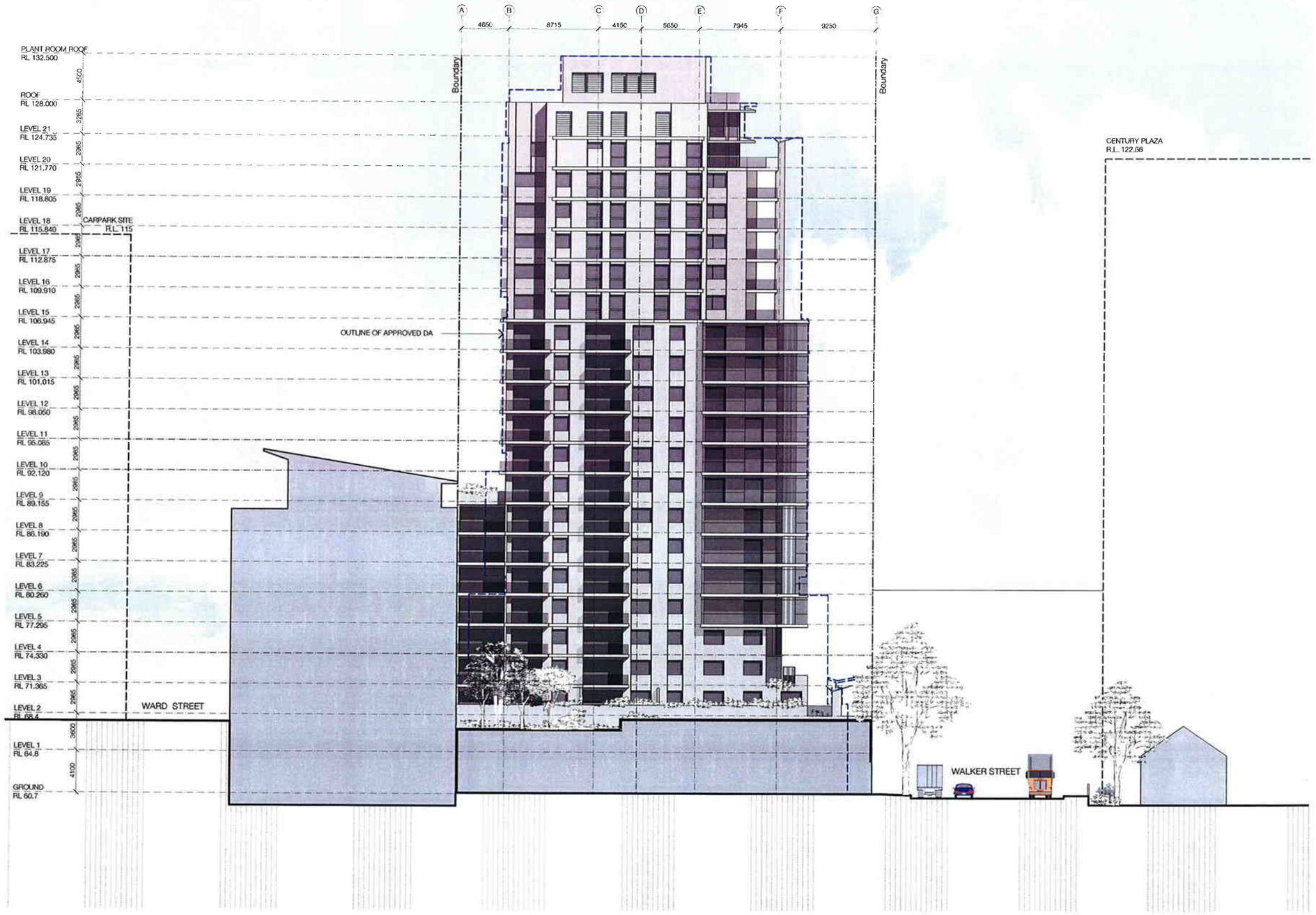
PROJECT
Proposed Residential Development
136-140 Walker Street
North Sydney

DRAWN	DESIGN	SCALE	DATE
SF	MS	1:400 @ A3	15/08/10

TITLE
North Elevation

DRAWING No.
A202

REVISION No.
B



South Elevation

Date 17/8/10

RESIDENTIAL DEVELOPMENT CONSULTANTS
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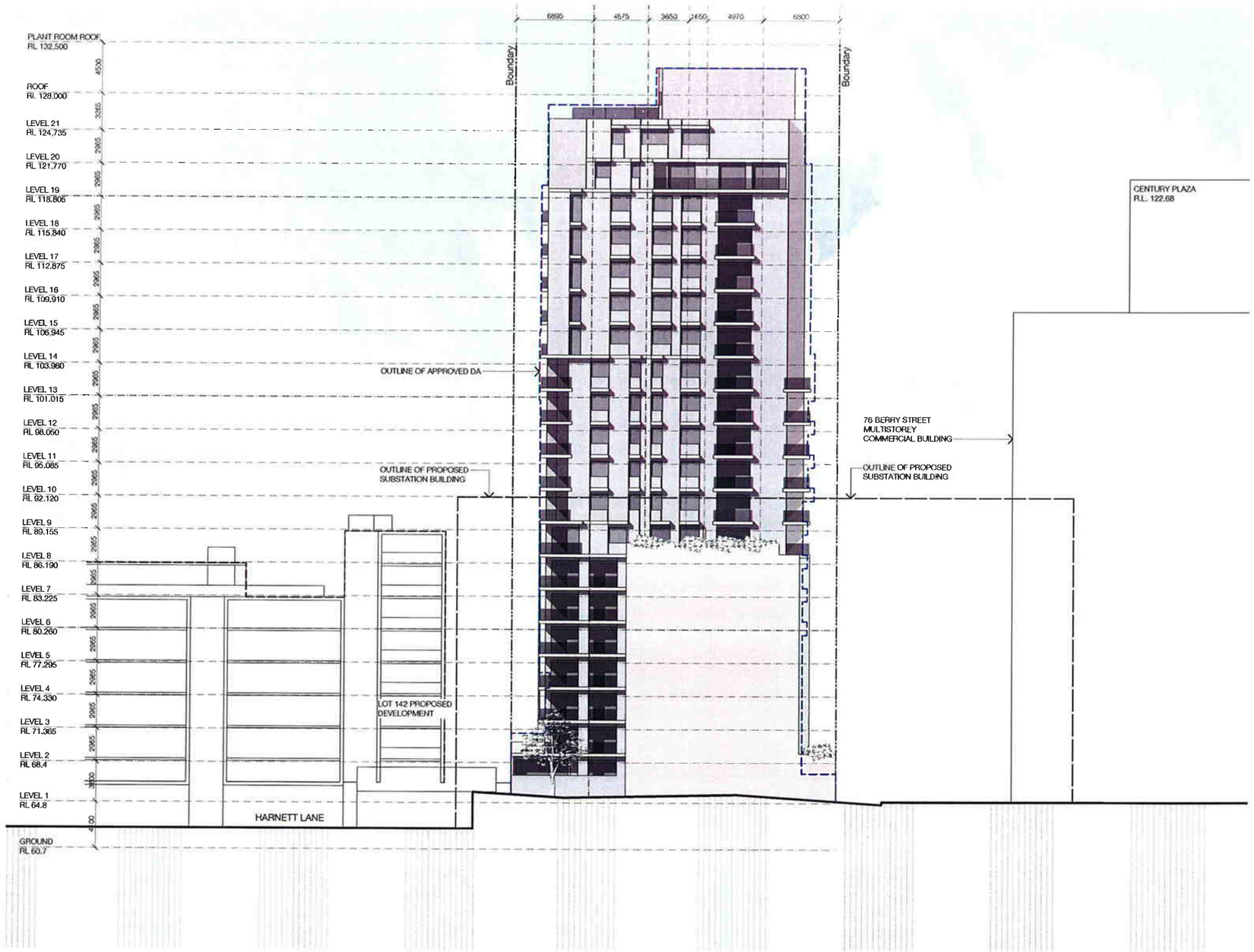
DRAWN	DESIGN	SCALE	DATE
SF	MS	1:400 @ A3	15/08/10

TITLE: South Elevation

DRAWING No.: A203

REVISION No.: B



West Elevation

Date: 17/8/10

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WINTEN PROPERTY GROUP

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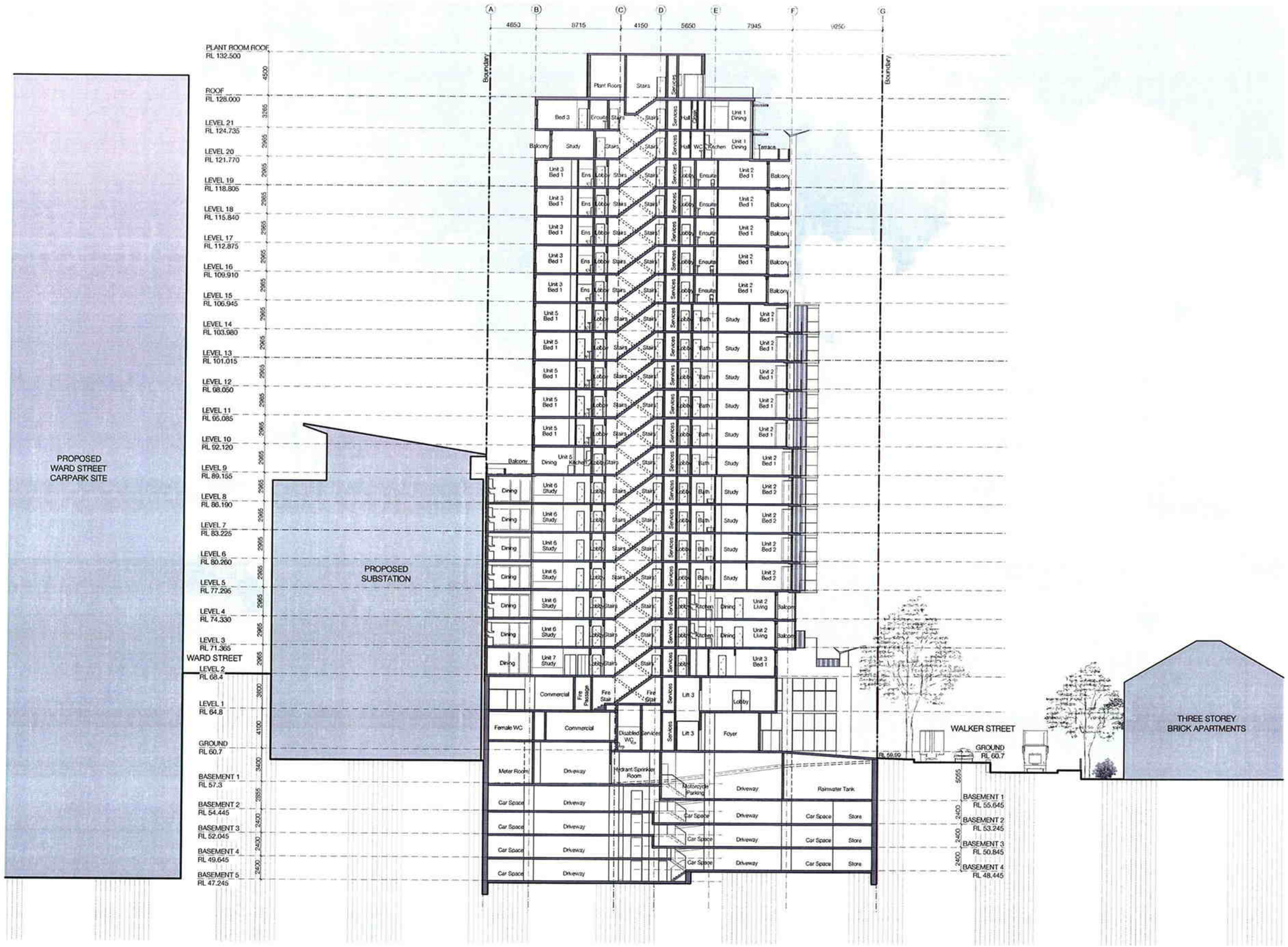
North Sydney

DRAWN	DESIGN	SCALE	DATE
SF	MS	1:400 @ A3	15/08/10

TITLE
West Elevation

DRAWING No.
A204

REVISION No.
B



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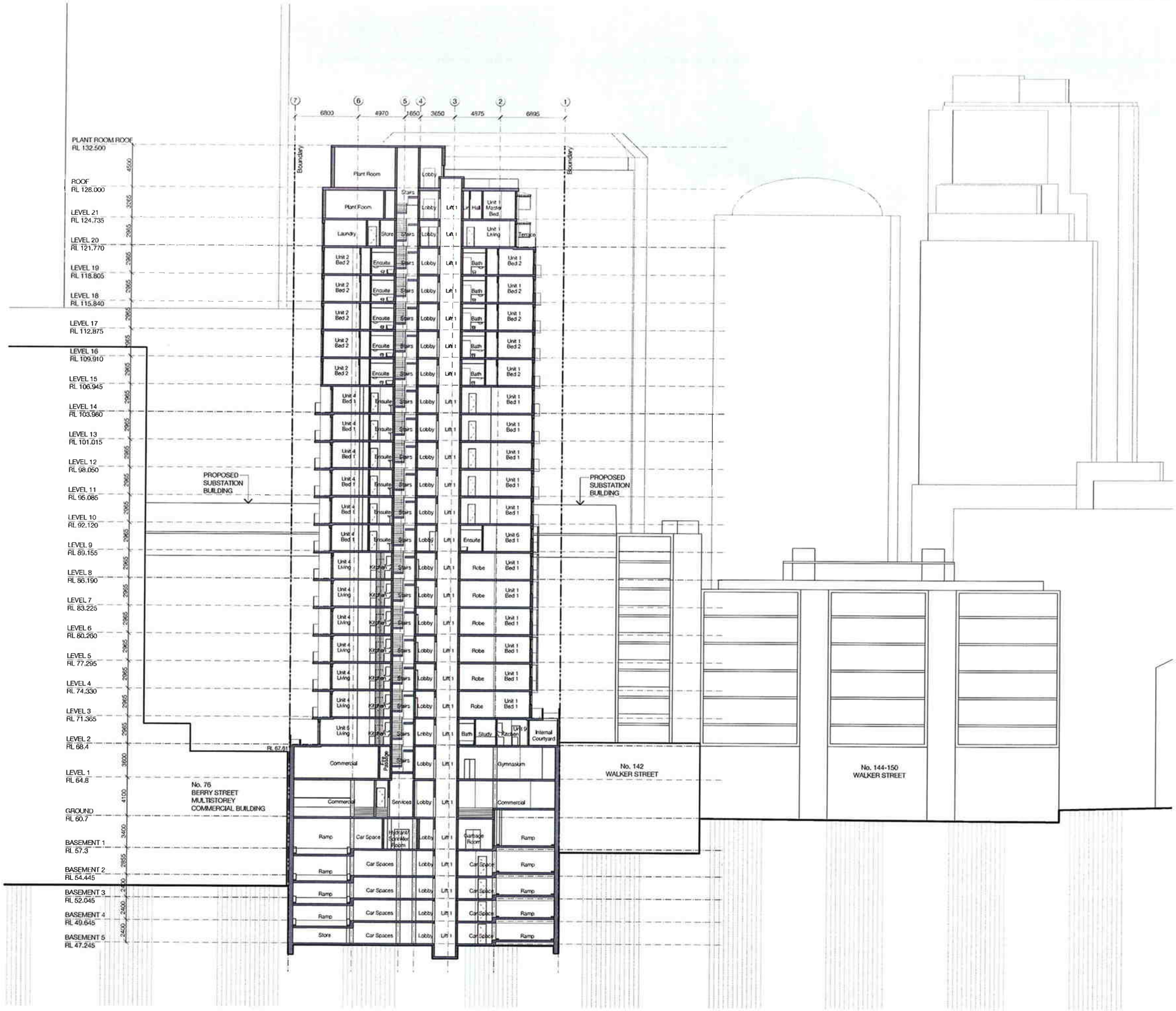
DRAWN	DESIGN	SCALE	DATE
SF	MS	1:400 @ A3	15/08/10

TITLE
Section A-A

DRAWING No.
A205

REVISION No.
B



Date: 17/8/10

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WINTEN PROPERTY GROUP

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DRAWN	DESIGN	SCALE	DATE
SF	MS	1:400 @ A3	15/08/10

TITLE
Section B-B

DRAWING No.
A206

REVISION No.
B

20-Oct-10

Winten Property Group
Level 10, 61 Lavender Street
Milsons Point NSW 2061

Attn: C Ryan

Dear Chris,

North Sydney Zone Substation Redevelopment

Thank you for inviting me to review the "Electric and Magnetic Fields Assessment (December 2009)" of the EA North Sydney Zone Sub-station, EMF report.

Comments:

In reviewing the above document there are areas that require correction in order to present an accurate assessment of the situation. We comment on various paragraphs as follows:

- **Part 2 Environmental Impact of EMF, page 4.**

  While EMF is part of the natural environment the man-made EMFs bear little resemblance to those occurring naturally. Natural EMFs tend to be static and short-term. Examples could be the earth's magnetic field which is essentially constant in size and direction. Lightning which is of extremely high voltage but very short-term, and visible.
  Man made EMFs on the other hand are generally alternating, long-term and frequently high level. There is no comparison between the two and to infer a similarity is not correct.

- **ARPANSA 19 February 2002 extract from Draft Standard, page 5.**

  The draft document, as EA would know, has been subject to significant changes since 2002 and a complete section on precaution has been included, and the quoted paragraph no longer exists. It would be appropriate to include sections 5.1 and 5.2 as follows:

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5.1 BACKGROUND

Epidemiological studies have consistently found an elevated risk of childhood leukaemia at ELF magnetic field exposure levels above 0.3 μT for the time-weighted arithmetic mean and above 0.4 μT for the time-weighted geometric mean. Although a causal relationship between magnetic fields and childhood leukaemia has not been established, estimates of the possible public health impact, if causality is assumed, can be made in order to provide a potentially useful input into the derivation of appropriate precautionary measures. It is important to note that, even assuming causality, there is no additional information on what the appropriate exposure metric should be. It remains possible that measures to reduce the time-weighted average exposure may not decrease the risk of childhood leukaemia and may, in fact, increase other childhood risks (e.g. risks associated with car travel, chemicals and air pollution). For adults there are a considerable number of publications investigating possible links between ELF magnetic field exposure and a number of endpoints including leukaemia, brain and central nervous system cancers, breast cancer, amyotropic lateral sclerosis and Alzheimer's disease. For each of these endpoints the associations are generally weak and inconsistent, and the studies are not always of a high quality; yet the possibility of an effect cannot be ruled out.

While the evidence is weaker, the overall potential impact of links to adult diseases is possibly, but not necessarily, greater than that of links to childhood leukaemia. This is because of the larger population and greater incidence of the diseases of concern. For this reason, and consistent with WHO (2007), adults are included with children in the precautionary considerations that follow. This Standard permits children or pregnant women to be considered more vulnerable in an assessment of precautionary measures.

In the implementation of precaution, care should be taken not to over-state the risk and unnecessarily raise concern. Precautionary measures "should not compromise the essential health, social and economic benefits of electric power." [WHO 2007]

5.2 WHY PRECAUTION IS JUSTIFIED

There is good evidence of an association between prolonged ELF magnetic field exposure and childhood leukaemia but poor evidence of causality and few clues as to the mechanism or the relevant exposure metric. For the reasons given in Section 5.1, adults should not be excluded from precautionary considerations but may be assessed as less vulnerable than children. Exposure of persons to magnetic fields is ubiquitous and some of the mitigation strategies are simple and of relatively low cost.

Regardless of whether causality is established there is sufficient concern existing for precaution to be taken seriously.

- **Page 5 3rd para**.

It is agreed that magnetic field levels in the order of 2 mG frequently occur in metropolitan homes, and that certain appliances have localised fields much higher. However there is a significant difference being exposed to a high field from an appliance for a few minutes or even a couple of hours to fields in excess of 4 mg continuously. The increases in magnetic fields from sub-stations can be at the level of appliances and higher for substantial times, maybe continuously and in the interests of precaution can not be ignored.

- **Page 5, ARPANSA public consultation draft.**

The proposed Reference Level for General Public exposure to RMS magnetic fields is 300 microtesla (3,000 milligauss). This level is for very short-term exposure only and ARPANSA have included a note "Reference levels are "instantaneous rms" values..." It is therefore not possible to suggest an EMF field of this magnitude is acceptable for any period of time longer than a few seconds. 24 hour exposure at this level is not permitted.

- **Page 8, 2nd para.**

The suggestion that "*electrically continuous metal cable trays and steel reinforcing in the walls and floors of the substation building*" will reduce magnetic fields is not correct at the levels being considered. There is even the possibility that the presence of steel will distort and even increase the field. It would be extremely difficult to calculate this effect.

- **Table 3 page 11.**

The limit of 1,000 mG should be 3,000 mG but as previously noted it only applies for very short-term (instantaneous) exposure. For long-term exposure precaution applies and levels of 24 or 40 milligauss if they existed within a residential or office space would not be considered safe.

- **Figure 1, page 12**

The magnetic field levels along the eastern boundary would not be acceptable within a residential or office space, as noted above. Our client requires meaningful information as to what levels his tenants or occupiers are likely to receive at any point in the proposed development with particular emphasis on sleeping areas. We require magnetic fields at distances normal to the sub-station eastern wall at all levels of their development. Figure 2 provides some of this information. At 10 metres from the boundary reasonable fields can be achieved but what does our client do with the property closer to the boundary?

- **Section 6 Conclusions page 16**

As previously noted EMFs exist in nature and are quite different in form and value to those emitted from sub-stations and electricity transmission lines. We have evolved to exist in natural fields we are not coping so well in some man made fields.

It is agreed that "*it is best to base public policy initiatives on independent and authoritive reviews and guidelines;*" We recommend to you ARPANSA Radiation Protection Standard – Limits and Precautionary Measures for Reducing Exposure to Electric & Magnetic Fields-0Hz to 3kHz – September 2010. A copy is available from James Hart, Energy Australia, Homebush. Tel:02 9394 6659
It is also agreed that health effects from long-term low level human exposure to EMF have not been established, however they have been classified by the World Health Organisation as possibly carcinogous and serious precaution is justified.

Conclusions.

Our client accepts the need for the planned sub-station to ensure continuity of supply in an area of increased demand. At the same time he is conscious of the public requirements for a safe healthy environment. This is particularly important when the perceived environmental hazard is silent and not visible. They need assurance that that all steps have been taken to minimise all possible risks.

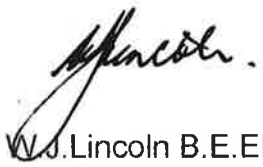
Normally a simple solution would be to increase the clearance distance from the EMF sources to the sub-station boundary, however there is limited real estate available and this is not an option.

It is accepted that there is not yet sufficient scientific proof to confirm the adverse health effects of EMFs but there is a host of epidemiological evidence to suggest a very real risk exists.

We therefore request Energy Australia adhere to their best practice of prudent avoidance and take steps to install suitable magnetic shielding and reduce the magnetic fields along the eastern boundary to no more than 4 milligauss (0.4 microtesla).

Installing shielding during the building stages will incur a comparatively moderate cost, significantly less than later installation when science is eventually able to confirm the connection between adverse health effects and moderate electromagnetic fields.

Yours sincerely



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Director

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16-Nov-10

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Level 10, 61 Lavender Street
Milsons Point NSW 2061

Attn: C Ryan

Dear Chris,

North Sydney Zone Substation Redevelopment

Confirming our discussion of this morning:

Draft ELF Standard

As recently as Wednesday 10th November 2010 ARPANSA advised the EMERG meeting held in Miranda that the draft standard was in the final review stage and was expected to be available for publication in early 2011. There are no proposed changes in the areas of safety levels or precautionary measures included in the last draft.

It should be noted it is unusual to refer to draft documents prior to acceptance and publishing, however since Energy Australia chose to quote from the 2002 draft it was important to set the record straight, as in my previous correspondence.

Shielding

There must be some misunderstanding with your contact at Energy Australia regarding shielding. EA like many other electrical utilities use shielding to reduce magnetic fields. There are a few methods in common use including arrangement of cabling and insertion of special shielding steel with properties similar to transformer steel.

We are aware of at least 3 companies who perform this work, there may be others, but the ones we know of are:

Magshield Products on St Kilda Road, Melbourne. Tel: 03 9521 6068

Brookes EMS P/L at Warranwood VIC. Tel: 03 9876 2496, and
RFI Industries at Bayswater VIC. Tel: 038739 6700

There are a number of sub-stations in the Sydney area that have incorporated shielding for magnetic fields. Transgrid shielded a very large transmission cable from Sydney South to Ultimo to ensure that no adjacent house was exposed to magnetic fields greater than 4 milligauss on the nearest external wall. We have checked some of these houses and can confirm the shielding was very effective.

Yours sincerely

W.J.Lincoln

W.J.Lincoln B.E.Elect
Director