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Toxic sites. Who can property buyers trust?

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10 September 2013 — Inspired by three seemingly unrelated events occurring in July in as many different regions of the Sydney property market, this article attempts to raise levels of awareness, and nothing more, about the nature and extent of a serious but often unrecognised risk facing buyers of residential or commercial property: contamination.

It is of particular importance to those contemplating or who already have children.

The three events were:



TV towers. Cause for concern?

- the start of off-plan marketing of prestige apartments in the Barangaroo development
- ABC's 23 July 2013 report on 7.30 into the now closed Camden High School site
- progress reports on the \$233 million redevelopment of the Nine Network Headquarters in Willoughby.

Contamination risks exist throughout Sydney and when considered cumulatively rather than on a case-by-case basis, their extent is truly alarming.

It is convenient to divide them into the following categories and types; none of which we hasten to add is exhaustive:

Category	Types	Sources	Examples
Air	Electromagnetic fields (EMF) and radio frequencies (RF)	TV and radio transmission towers Mobile phone towers and base stations High voltage overhead power lines Substations	Lower north shore Waverley Sydney wide Kareela French's Forest Greenacre Sydney wide and expanding regularly to meet demand
	Motor vehicle exhaust fumes	Major roads Unfiltered exhaust stacks	Within 500 metres of any such road in Sydney Flinders Street, Darlinghurst, and elsewhere in Sydney
	Asbestos fibres	Former military installations or factories	Bundock Street, Randwick Camellia
Ground	Electromagnetic fields (EMF) and radio frequencies (RF)	High voltage underground power lines	City East Cable Tunnel Project through Surry Hills
	Lead	Major roads which formerly carried high volumes of motor vehicles running on leaded petrol leaded paint	Balmain Glebe (especially along parts of Bridge and St Johns Roads) Camperdown Cabarita

	Uranium	Former uranium processing plant	7 – 9 Nelson Parade, Hunters Hill and possible surrounds
	Thorium (radioactive material)	Former tin smelter	Kellys Bush and some roads in Hunters Hill where thorium was used as road fill
	Benzene / cyanide / hydrocarbons/ dioxins/other petroleum based compounds	Sites of former gasworks and chemical and paint factories Existing and former service stations with leaking underground tanks, pipes and couplings	Barangaroo 2 King Street, Waverton Stuart Street, Manly 455 The Kingsway, Miranda 1 – 3 Oxford Street, Sutherland Abbotsford Rhodes Breakfast Point Homebush Bay Wollstonecraft Burren Street, Erskineville 475 Cleveland Street, Surry Hills 79 and 81 Wilson Street, Newtown Along parts of Inner West Light Rail route under construction (described by the Transport Minister as "very concerning") High Street, North Sydney (HMAS Platypus) Sydney wide
Water	Sewage	Beach stormwater or sewage outlets	Malabar Beach
	Chemicals	Sites of former gasworks and chemical factories Coal seam gas mining	Catherine Field (near Camden)

Common to all such risks is the difficulty in containing their effect or in knowing just how far the risk spreads from the contaminating source or in identifying all potential sources.

Sites contaminated by existing or former service stations provide a clear illustration.

While the NSW Environment Protection Authority maintains a public register of contaminated sites, that register is neither exhaustive nor does it identify the extent to which such contamination has or might have spread to or beneath neighbouring properties or into any groundwater.

Of further concern, as also discussed below, is the pattern of events that invariably emerges once a contamination risk is exposed:

it is quickly countered either by an initially concerned bureaucratic or governmental response that thereafter goes nowhere (for example, the Transport Minister's remark above) or is to the effect that the contamination is well within some official guideline or standard (for example, the Environmental EME below)

almost as quickly segues from front page headlines to an obscurity confounding even the most diligent Google sleuth.

Other related concerns include:

the generally low level of awareness into lead contamination as discussed by Macquarie University academics Laidlaw and Taylor in their 2011 article "*Potential for childhood lead poisoning in the inner cities of Australia due to exposure to lead in soil dust*", which, according to its Abstract:

"...presents evidence demonstrating that the historical use of leaded gasoline and lead (Pb) in exterior paints in Australia has contaminated urban soils in the older inner suburbs of large cities such as Sydney and Melbourne."

(That blanket remark should however be seen in the light of a recent comment from another authoritative source consulted by this article that lead pollution is a field of scientific research notorious for analytical problems as well as sampling errors.)

the absence of any or any easily available evidence as to the current state of remediation works carried out many years ago and when the science was less developed than it is today (for example,

the 1999-2000 remediation of a former gasworks to create the Wondakiah residential estate in Waverton).

In the first two events mentioned above, the contamination is in the ground caused by substances having leached from a former gas works. Parts of Barangaroo are also contaminated with asbestos. The third event involves a species of potential contamination through the air.

Barangaroo

The contamination at Barangaroo from the long since demolished Millers Point Gasworks actually came to light some years before the project was approved and involved The Bond apartment building at 30-38 Hickson Road, Millers Point.

It made the headlines in the *Sydney Morning Herald* on 15 and 16 March 2007; the latter of which article reported:

Occupants of a Millers Point apartment block named as subject to "contamination issues" by a government agency are furious they were never told about toxic chemicals in the area around their building.

As revealed in the *Herald* yesterday, the land around The Bond apartments at 38 Hickson Road has been identified as potentially contaminated with toxins, in documents prepared by the Department of Environment and Conservation.

The building has been celebrated as a model of environmentally friendly architecture and was given the first five-star building greenhouse rating in the country for its design.

NSW Health investigated the area after complaints about strange odours and headaches from residents at The Bond in late 2004. Their investigators found "a tarry, petrochemical smell", and contamination left over from the gasworks that was previously in the area...

[The developer] said 38 and 36 Hickson Road had been properly decontaminated "as part of the remediation at vast expense to the company and in accordance with every requirement of the approval process, satisfying all concerned authorities including Sydney City Council, the Department of Environment and Conservation, NSW Health and WorkCover".

A spokesman for Lend Lease, which has its headquarters at 30 Hickson Road, would not comment. The building's owner, property fund manager DB RREEF, did not return calls".

Following that blaze of publicity and conforming to the pattern mentioned earlier, little more was heard about the contamination at and surrounding The Bond building.

However, a thorough on line search reveals the following report by Coffey Environment prepared for Sydney City Council dated 29 June 2009; almost five years after the alarm was raised and which is still only a "*Preliminary Environmental Investigation*".

Despite being a preliminary document, its conclusions are a source for concern both for currently hapless occupants and owners in The Bond building as well as other parts of Barangaroo, which have also been the subject of other adverse reports too numerous to mention in this article and may well be relevant to those interested in buying properties now being marketed off the plan:

"High levels of soil and groundwater contamination are present in the former gasworks infrastructure... Heavier fraction hydrocarbons have seeped slowly downwards... and are present within the bedrock in these areas... From review of ERM investigation data for the adjacent Barangaroo site, the gas works (also present on adjacent site) has also impacted soils and groundwater beneath the Barangaroo site and may potentially migrate to Darling Harbour. The adjacent site therefore also represents a primary source of contamination... It is the nature of contaminated site investigations that the degree of variability in site conditions cannot be known completely and no sampling and analysis program can eliminate all uncertainty concerning the condition of the site."

Camden High School

According to the following introductory remarks from the ABC on 23 July 2013, the former Camden High School site is associated with suspected cancer clusters leading to the threat of a class action involving former pupils and teachers who have either died or are suffering from various forms of cancer.

"The [gasworks] contaminants weren't discovered until 1995. They were buried and contained in '96 and the school eventually moved in 2001 because of the toxic waste. Reports from the time detail the long list of dangerous substances such as carcinogenic hydrocarbons, benzene and cyanide. They were hidden for decades on the site while students went to school above."

Network Nine Headquarters

Here, the possible culprits are EMF and RF emanating from the TV tower on the corner of Artarmon and Willoughby Roads.

For an indication of the potential extent of this contamination, one needs to aggregate the EMF and RF emanating from Network Nine's TV tower with similar emissions from two other TV towers at Gore Hill and Mowbray Road in Chatswood.

This is a topic that found itself swept under the carpet almost as quickly as it emerged and where it remains largely hidden to all but those members of a relatively new discipline spawned by such issues known as "building biologists".

Its genesis is to be found in the results of a 1996 study relating to these three towers by Dr Bruce Hocking et al entitled "*Cancer incidence and mortality and proximity to TV towers*".

The study's objective was to determine whether there is an increased cancer incidence and mortality in populations exposed to RF radiations from these three TV towers using an ecological study comparing cancer incidence and mortality rates between 1972 and 1990.

As RF radiation decreases with the square of the distance from the source, the study compared results

between the "inner areas" within about four kilometres of the towers and comprising the Local Government Areas of Lane Cove, Willoughby and North Sydney with six "outer areas" comprising the Ryde, Ku-ring-gai, Warringah, Manly, Mosman and Hunters Hill LGAs.

It concluded:

"Childhood cancer incidence and mortality (brain cancer and leukaemia) for the inner and outer areas were compared with cancer incidence and mortality data for the whole of New South Wales. Leukaemia incidence and mortality were significantly increased in the inner area, but incidence and mortality data for the outer area were similar to data for the State as a whole."

In an interview reported in the 15 May 1996 edition of the *Sydney Morning Herald*, Dr Hocking later said:

"There is an association but more detailed studies are needed to confirm the association between RFR and cancer before firm conclusions may be reached."

The response from the then Minister for Communications and the Arts was:

"I'm advised that national and international research indicated no substantiated evidence of adverse health effects from extended exposure to everyday, low-level electromagnetic energy... However, the government is aware of research findings that sometimes challenge this. For this reason, and because of public concern, we keep the issue under close examination to ensure the safety of the Australian people... [Dr Hocking's proposal for further research is] being seriously considered".

According to Dr Hocking:

"They referred them to an interdepartmental committee, which I thought was a fairly cool response to a matter that I considered may be cause for concern to a lot of people who live in the areas of TV towers."

As an indication of the spread of such possible contamination, Dr Hocking's last comment may have implications for all 50 suburbs that make up the three inner area LGAs considered by the study. The same presumably applies to several other suburbs within about a four kilometre radius of a similar tower at 50 Botany Street, Waverley.

Despite this, little more was heard with few people apparently aware that in a follow up study four years later, Dr Hocking found that the following survival rates for childhood leukaemia in patients diagnosed between 1972 and 1993:

Living Circumstances	Surviving for five years %	Surviving for 10 years %
Closest to TV towers	55	33
Further from TV Towers	71	62

Such findings contrast with the Environmental EME Report for this tower dated 20 August 2012 (available on the Australian Mobile Telecommunications Association website), which contains these apparently comforting words:

"The maximum cumulative EME level at 1.5 m above ground level is estimated to be 17.88 per cent of the Australian Radiation Protection And Nuclear Safety Agency public exposure limits."

In deciding who or what to believe, attention is drawn to a PhD thesis submitted in 2010 by Dr Donald Maisch to the University of Wollongong entitled:

"The Procrustean Approach – Setting Exposure Standards for Telecommunications Frequency Electromagnetic Radiation"

As appears in the Abstract and introduction to that thesis:

"Since the 1950s there has been an ongoing controversy regarding the possibility of health hazards from exposure to non-ionizing radiation emissions from radiofrequency and microwave (RF / MW) technology. In response to these concerns, and with support from the World Health Organization... human exposure limits have been developed [which]... although differing in detail, are founded on the same scientific literature base and deem that the primary hazard to be considered in setting human exposure limits is thermal. This is defined as an excessive and harmful rise in body temperature as a consequence of exposure to high-level RF / MW emissions. This viewpoint has come to dominate the debate at an international level and is justified by these organizations as a product of expert risk assessments of peer reviewed data..."

It will be shown that these processes have been prone to political manipulation and conflicts of interests leading to various scientific perspectives being marginalised with reluctance on the part of regulators to make decisions that might inconvenience industry interests..."

This thesis argues, however, that by limiting RF exposure limits to thermal considerations the various organizations charged with setting and maintaining the above RF standards have cut off from consideration scientific data that does not conform to their understandings of how RF exposures interact with biological tissue..."

The central theme of this thesis will be to critically examine the extent that conflict of interests within RF standard setting committees has led to this approach that has been in existence for over half a century".

Readers can decide whether, in the 284 pages that follow, Dr Maisch makes good that proposition or not.

And now for the better news...

Much and perhaps most of the Sydney property market is not affected by such contamination risks and those which are may enjoy features mitigating and even eliminating those risks such as intervening topography, built environment and prevailing winds.

One thing is for sure

There is much more to buying property than merely analysing comparable sales evidence, nearby development applications and the incidence of barking dogs.

This article was originally published by [CurtiseCall](#).

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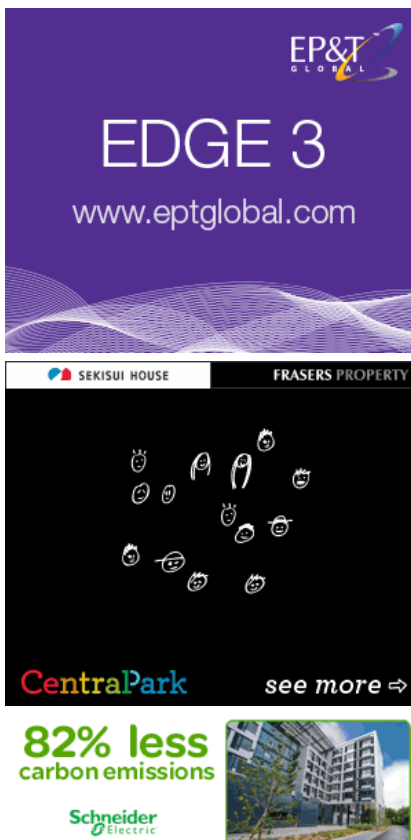
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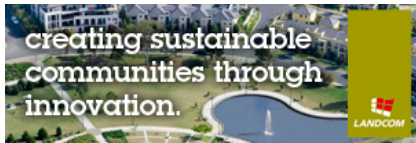
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