Mr John Hawkins
Secretary
Senate Economics Committee
Department of the Senate
PO Box 6100
Parliament House
Canberra ACT 2600
Australia

C/O E-Mail: John.Hawkins@aph.gov.au
Sandra.Kennedy@aph.gov.au

10 June 2010

Dear Sir

The new research and development tax incentive draft legislation("the draft R&D legislation")

Thank you for the opportunity to appear before the Senate Economics Committee on Friday 21st May, 2010 to comment on the proposed R&D legislation.

As requested, we have provided further detail regarding questions posed at the hearing. This submission should be read in conjunction with Senate submission dated 31 May 2010.

We note that the details for the majority of questions has been provided in this previous Senate Submission.

The information provided in this submission answers particular queries identified in the transcript made available recently.

We believe that each of the issues we raised in our submission and at the hearing can be simply addressed while maintaining the integrity of the R&D provisions.

Yours sincerely

Andrew Mihno

Deputy Executive Director International & Capital Markets

Property Council of Australia

Submission: Further Answers to R&D Senate Inquiry

Property Council of Australia
June, 2010

1 Senate Hearing Questions

R&D incentives Hearing on 21 May 2010.

The information below is provided in answer to specific questions identified in the transcript of the Senate Economics Legislation Committee - Inquiry into Tax Laws Amendment (Research and Development) Bill 2010 and Income Tax Rates Amendment (Research and Development) Bill 2010.

Answers to Questions raised by Senator Hurley (Chair Senate Economics Legislation Committee)

1) ***"Can you give me any indication or ballpark figure about what percentage or what number of construction companies might take advantage of the existing R&D rules?"*** **(page 42)**

   Attached below is data for construction companies claiming the R&D Tax Concession.

   The information is based on Annual Reports published by AusIndustry. The data that was available covers the six years from 2001/02 to 2006/07.

   Over the period, the data shows that on average, **155** construction companies claimed R&D incentives each year representing about **2.7%** of all R&D claims each year on average (**5,736 claims**). On average, the total R&D claimed for these projects was **$403 million** each year representing about **4.9%** of total R&D claimed by all taxpayers each year on average (**$7.9 billion**).

R&D Tax Concession						
Year	**Total Claimants**	**Construction Claimants**	**% Construction Companies**	**Total R&D Spend for total claims ($m)**	**Total Construction Spend ($m)**	**% Construction Spend**
2001-02	4,754	124	2.61%	$ 6,092.80	$ 244.30	4.01%
2002-03	5,094	134	2.63%	$ 6,362.80	$ 261.00	4.10%
2003-04	5,634	128	2.27%	$ 6,921.50	$ 301.80	4.36%
2004-05	5,830	141	2.42%	$ 7,785.70	$ 437.70	5.62%
2005-06	6,295	177	2.81%	$ 9,234.40	$ 581.51	6.30%
2006-07	6,806	225	3.31%	$ 11,594.72	$ 589.68	5.09%
Average	**5,736**	**155**	**2.68%**	**$7,998.65**	**$402.67**	**4.91%**

2) ***"I am wondering how much of the R&D is done by the construction companies, as opposed to people who go off separately, form an R&D type company and then, once they have proved or taken a product to an initial stage, take it to the construction companies to incorporate it?"*** **(page 42)**

As foreshadowed at the hearing, the Property Council has not been able to access direct data to provide this information.

Generally speaking however, anecdotal evidence would suggest that most of the R&D we are specifically concerned with in the property industry would be conducted by construction companies.

Inevitably there will be R&D undertaken by other types of companies, however it may not be construction R&D per se.

For example, a new product might be developed by a building materials supplier and that company would claim R&D for the product development. A construction company may then take that product and attempt to use it in its construction activities and undertake further R&D in doing so.

In some cases, where a company undertakes R&D to develop a product, construction companies may then undertake further R&D to develop new uses for the product in ways that had not been anticipated by the original manufacturer.

Answers to Questions raised by Senator Eggleston (Deputy Chair Senate Economics Legislation Committee)

3) ***"Does the building industry publish its work anywhere? Do you come up with some new way of doing things or some technique which is then published in a journal of some kind?"*** **(page 43)**

Please see answer three in Section two of the Property Council submission dated 31 May 2010.

The Property Council does not have any further information to provide at this time.

4) ***"Does your industry have any products, if you like, which you own intellectual property rights for, or ideas and techniques that are sold under licence around the world to other building developers?"*** **(page 43)**

Please see answer three in Section two of the Property Council submission dated 31 May 2010.

Independent construction companies may be engaged by specific developers and provide the construction company's R&D and know-how in order to fulfil the contract. Construction R&D also finds its way into new products sold to the industry. Through normal commerce, the property industry as a whole has access to the results of R&D undertaken by individual construction and property companies. In time, construction techniques and intellectual property will become public domain as it does with R&D in other industries. Equally, as employees move within the industry knowledge that is not confidential is shared with subsequent employers.

In the case of some R&D projects we noted as examples in our submissions, the construction company engaged a range of consultants/contractors, each of whom worked on a specific aspect of the project. In those circumstances, there is unlikely to be a formal piece of IP generated by each contractor that they could register. The knowledge would be available both to the contractor and the construction company for future use.

The construction company however, is the one who has access to all of the specific results from each contractor and is therefore best placed to use these results again on a future project.

We do not however have access to specific information regarding companies that sell their R&D intellectual property alone under licence around the world.

Answers to Questions raised by Senator Cameron

5) ***"Can you take it on notice and provide the committee with any example where there have been failures and significant losses to a building company because the design just fails some of these basic tests?"*** **(page 47)**

Please see answer four in Section two of the Property Council submission dated 31 May 2010 and the additional detail below.

We appreciate the additional clarifying information provided by Senator Cameron subsequent to the inquiry.

As you would appreciate, there is considerable commercial sensitivity surrounding development failures so the examples provided below have had identifying details excised.

Example 1: Effective Remediation of Deeply Contaminated sites

Developer A purchased a site that was disused for a number of decades due to deep and complete soil contamination that could not be cost effectively remediated by traditional techniques. Without safe and cost effective remediation, the site had little or no development potential and in fact was a hazard.

Developer A intended to use the site for a large, staged, mixed use development and agreed with various State Government Bodies to remediate the site at its own cost as a condition of purchase.

The size of the site and the high level of toxic contamination meant that it was not practical or safe to use traditional techniques for remediation. The volume and toxicity was too great for existing treatment techniques and it was not possible to dispose of the soil nor could it just be dealt with by containment.

Developer A trialled a new technique which involved burning the soil in large volumes, at high temperature to neutralise the contaminants so it would be rendered inert and safe for reuse around human habitation.

The risk variables included research to determine:

1) the volume of soil that could be treated at one time and the characteristics of the soil making it cable of being treated by the proposed technology;
2) the duration and rate of treatment;
3) the temperature at which the soil had to be heated to ensure that the many varied chemical and toxins would be safely removed;
4) the appropriate construction and design of the remediation rig;
5) the appropriate design of filters; and
6) the appropriate level of remediation had been achieved.

Developer A had budgeted for a remediation taking six months with the use of this new technology.

The difficulties encountered in remediating such a large volume of heavily contaminated soil resulted in continual breakdowns and failures of the technology during R&D trials. The remediation was slowed down by the setbacks.

Developer A continued to test, develop and use the technology resulting in significant cost blow outs of tens of millions of dollars, significant unanticipated holding and financing charges, contract penalties and significant costs associated with delays in approval associated with the failed trials and the inability to occupy completed units until State Government Bodies were satisfied with the works.

Developer A had little choice but to continue to try to refine the technology due to the massive development costs that would have been lost had the site been abandoned and given the local community's sensitivities regarding potential exposure to the contamination.

The remediation involved continuous R&D and refinement of the technology but eventually had to be abandoned as a failure and other methods investigated until a suitable approach was found to deal with remainder of the contamination to an acceptable standard.

By this time sufficient soil had been remediated to allow the use of other traditional technologies acceptable to the Environmental Protection Authority (EPA).

The remediation was eventually finished 2 years later and had caused significant cost overruns, delays and penalties to Developer A over and above the R&D costs sunk into the project.

Importantly, although the R&D was a failure on this site because the technology and design could not be refined sufficiently at that time, the technology was used successfully on an another site by building on the design improvements created by the original failed R&D project.

This technology can now be widely used by developers Australia wide to cost effectively remediate large sites which are heavily contaminated.

Example 2: Development of rock blasting techniques for foundations

Developer B needed to lay a building foundation on a very confined site that was surrounded by established occupied buildings.

There was considerable concern that the site had solid rock and irregular subsoil that was likely contain materials left by the previous occupants that might react violently to traditional blasting techniques.

The materials concerned were well buried on the site and there was no remediation issue but it was necessary to remove the subsoils to lay the foundation.

There was concern that excessive disturbance of the subsoil could cause subsidence or damage to surrounding buildings. It was not possible to lay a foundation without dislodging the subsoil through blasting.

Research had to be conducted to determine what appropriate level of blasting force would safely to break up the rock and subsoil so it could be removed for a sound foundation.

It was determined that the site variables were too great to be able to model/test blasting techniques on a small scale away from the lot.

Tests for various blasting techniques needed to be done on site.

The risk variables included research to determine:

1) the minimum force necessary to break up the subsoil and rock;
2) the arrangement of explosive materials to avoid subsidence and damage to other buildings;
3) the reactive nature of the subsoil and its safe handling using pyrotechnics.

The research and development ultimately failed to find a suitable blasting technique to safely dislodge the subsoil on part of the site. The R&D had to be abandoned.

It was not possible to develop that portion of the site. It had to be left untouched.

Construction had to be delayed in order for a partial redesign of the building. This caused significant cost overruns for the site over and above the sunk R&D.

The construction of the structure was not claimed.

Test blasting and analysis was claimed as part of Core R&D activity

Evaluation of potential alternatives to blasting prior to commencement of blasting claimed as supporting R&D activity.

Example 3: Structural Design of Building Basement

This building R&D project that was ultimately abandoned due to technical issues and cost overruns.

Developer C needed to develop a suitable design and construction process to construct a 3 level building basement carpark in the poor soil condition for constructing buildings.

The development of a structural design was extremely difficult because it was surrounded by high-rise and heritage listed buildings with underground public transport/services very close to the excavation. There was also a concern that the unstable and irregular subsoil would not be able to support the structural integrity of the basement and building or cause surrounding buildings to subside.

Developer C needed to conduct research, investigate and test what structural design and building techniques would work for the geology of the site.

Without the R&D, there was considerable technical risk that the building design would be undermined and the construction techniques used would be structurally compromised.

The risk variables for research included:

1) uncertain geology of the site and the specific nature of the soil types;

2) developing construction techniques to avoid damage to sensitive underground infrastructure very close to the site;

3) investigations, planning and design to avoid damage to surrounding buildings and properly construct the basement, floor and façade because of the difficult soil conditions;

4) Identifying and developing appropriate construction techniques and support for the basement and building structure.

Before any substantial structural design and construction could take place, extensive surveys and investigations had to be undertaken and a site logistics plan developed for the difficult site.

The investigations at the outset of the project revealed that acid sulphate soils and extensive groundwater on site. A soil treatment and dewatering strategy was needed.

Both of these issues had the potential to undermine the construction and stability of the basement and building.

In treating the soil, a fast neutralisation process was required and a new soil neutralisation process was trialled.

Geotechnical investigations also revealed that the lower portions of the basement construction would take place below the water table. As the basement is dug out, it would fill with water and potentially undermine the structure of the soil and surrounding buildings.

Further geological testing and modelling was required to determine how to appropriately design and anchor the diaphragm walls that would keep the project from flooding.

The difficulty was that surrounding building owners did not agree to standard ground anchors being installed under their building and subsequently a new method for using piles and structural steel to retain the diaphragm wall was developed.

Installation of the temporary anchors to support the diaphragm walls indicated that the lower subsoil was a sand clay layers. Consequently the construction technique

developed had to be adapted to suit the sand clay nature of the soil (which is an unpredictable soil structure).

As the Diaphragm Wall installation progressed, layers of solid clay, were discovered and an investigation into the technical insufficiency revealed that an extra wall depth was required to counter the clay.

During the basement construction trial, on reaching areas where the excavation for anchor platforms in front of the Diaphragm Wall was in clay, the construction technique to auger through the clay layer directly behind the wall at an angle was trialled.

It was expected that this process would result in the intersection of sand lenses but only solid clay was encountered. This posed a significant technical challenge because they now had to develop a different anchoring system technique to successfully integrate into clay soils.

Trialling of enlarged anchor pot holes was conducted in an attempt to develop a different anchoring system in clay. Furthermore the drilling and bearing capacity of the clay ground anchors had to be determined.

Further technical risk was inherent in the removal of the temporary supports. Developer C had developed this innovative retention system specifically to deal with the issues relating to the inability to cast anchors underneath, however there was uncertainty about how this system should be removed and the effects that inappropriate removal would have on the structural integrity of the basement.

A staged methodology was developed and then tested in a systematic manner for each stage in order to mitigate the technical risks that existed.

The considerable difficulties that were encountered could not be modelled or identified ahead of time and had to be dealt with as construction occurred on site. The project had significant delays and cost overruns.

Ultimately, the whole project was abandoned because of cost overruns.

Developer C claimed Core R&D activities for development and testing of:

1) basement construction process, including testing of new ground anchor process and the ability to support diaphragm walls (testing of drilling and bearing capacities);

2) pile and steel supports.

Developer C claimed the following Supporting R&D activities:

1) geotechnical and environmental investigations;

2) site preparation based on results, including treatment of acid sulphate; and

3) soils, dewatering, trialling of innovative soil neutralisation process.

6) ***"Could you advise the committee on notice how moving from dominant to substantial will guard against the type of claim that was made in relation to that air conditioning example that has been discussed at various committee meetings?" (page 48)***

[the air-conditioning example] ***"…the project involved the construction of a new building that has a stated design goal of meeting newly emergent accreditation standards. The core R&D centres on improving air-conditioning, yet the company has registered around $100 million for the R&D project, of which 85 per cent is the cost of constructing the building, which the company regards as a prototype to test the R&D. The actual core R&D activities probably represent less than 10 per cent of the company's claim. I am not asking you to comment on a specific, detailed analysis; I am saying that that is the claim that was made. I would like your comments on that and how moving from dominant to substantial would guard against that misuse, in my view, of public finances."***

Please see answers one and two in section two of the Property Council submission dated 31 May 2010.

We re-iterate that the integrity of the test is not disturbed by using "substantial" instead of "dominant" purpose. It simply recognises that other material purposes for the activity can exist.

It still requires the activity to have a significant purpose for R&D.

A claim for supporting R&D is therefore only legitimate where the activity is absolutely essential to the R&D itself - such as where some construction has to be undertaken in order to properly conduct the R&D.

We do not see that the current rules can reasonably be interpreted to easily allow taxpayers to claim the whole cost of a building where there is not R&D conducted throughout and reliant on the whole structure.

If the Senate is concerned with "whole of building" claims, it can simply be dealt with through an appropriate EM example, without risking the integrity of the rules to guard against this extreme possibility.

This would not require the existing rules to be changed in any substantial way.