BDP

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Australian Council of Building Design Professions

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The Building Performance Study
Productivity Commission
Locked Bag 2
Collins Street East
Melbourne Vic 8003

ATTENTION MR JAMES LATHAM

Dear Sir

Improving the Future Performance of Buildings

On behalf of the Australian Council of Building Design Professions (BDP) I enclose a submission to the Research Study examining the performance of commercial buildings.

The enclosed submission considers the questions in the *Issues Paper* and identifies issues in the procurement process, in the hope that the Productivity Commission may be able to provide information to the Government for better future performance of commercial buildings.

In particular BDP submits that as the design process determines the performance of buildings and most gains can be achieved by "getting the building envelope right", it is essential in any procurement model that the integrity of the design process be maintained, particularly through adopting reliable methods of selection for building design professionals.

Building performance is assessed by different people in the building cycle in different ways. Those who invest in buildings have different criteria and different time periods for measuring the performance relevant to their own interests.

Currently, the future performance of commercial buildings is determined by a design process under which building design professionals take their instructions from clients or building initiators (to use the *Issues Paper* definition).

Thus, although there appears to be no shortage of technical knowledge about sustainable design and increasingly more sophisticated performance indicators and methods to assess the economic viability with regard to procurement and management of buildings, decisions are still being made on the basis of the bottom line budget considerations of individual stakeholders.

Furthermore, community and public interests, will not be adequately accounted for when the process is left to be driven by market forces as above - in fact, it is likely that these community and public interests will not be accounted for at all.

To provide you with information on the Australian Council of Building Design Professions, I have attached the 1999 BDP Year Book.

I would be pleased to discuss any aspects of this submission with you.

Yours sincerely

Heather Howes
Executive Officer

EXECUTIVE SUMMARY

The Productivity Commission is required to undertake a research study examining the performance of commercial buildings and analysing any impediments to better performance of such buildings, and how to overcome them. However, there is no clear definition provided of "performance".

Building performance is assessed by different people in the building cycle in different ways. Those who invest in buildings have different criteria and different time periods for measuring the performance relevant to their own interests.

Currently, the future performance of commercial buildings is determined by a design process under which building design professionals take their instructions from clients or building initiators (to use the *Issues Paper* definition).

Thus, although there appears to be no shortage of technical knowledge about sustainable design and increasingly more sophisticated performance indicators and methods to assess the economic viability with regard to procurement and management of buildings, decisions are still being made on the basis of the bottom line budget considerations of individual stakeholders.

Furthermore, community and public interests, will not be adequately accounted for when the process is left to be driven by market forces as above - in fact, it is likely that these community and public interests will not be accounted for at all.

Such community and public interests include -

(i) impact on public services and infrastructure through the life cycle of the project
(ii) community sustainability issues, eg the impact of the building initiator's priority for short term economic performance on the choice of construction materials, building services and construction techniques and consequent impact on -

- air quality (ie impact on occupants of indoor air quality and impact on the environment of the outdoor air quality from the project)
- life cycle energy consumption
- non energy related environmental impacts, eg biodiversity loss; other emissions from the product manufacturing process to air soil and water; etc.

(iii) culture and amenity - eg commercial buildings today largely define the form and quality of the urban environment - given the priorities of building initiators, what is the future performance of commercial buildings in defining the cultural value and amenity of the public urban environment.
(iv) social costs / benefits to the community as a whole - eg

- social impacts such as increased private transport use (congestion, pollution, accidents, other social on-costs) associated with provision of substantial car parking spaces within a building
- loss of solar gain from overshadowing neighbouring buildings

- creation of local high wind areas and wind tunnel effects
- glare from poor choice of materials.
- more abstract concepts such as the extent to which our built environment reinforces our cultural self-image making process
- role of government in determining the "landscape in which private sector enterprises make economically rational decisions

BDP submits that as the design process determines the performance of buildings and most gains can be achieved by "getting the building envelope right", it is essential in any procurement model that the integrity of the design process be maintained, particularly through adopting reliable methods of selection for building design professionals.

The following submission considers the questions in the *Issues Paper* and identifies issues in the procurement process, in the hope that the Productivity Commission may be able to provide information to the Government for better future performance of commercial buildings.

INTRODUCTION

This submission is made by the Australian Council of Building Design Professions Ltd (BDP) which is a peak construction industry body consisting of the major professional and employer associations representing architects, engineers, quantity surveyors, planners and landscape architects. It includes -

- **architects** (represented by the Royal Australian Institute of Architects (RAIA) and the Association of Consulting Architects Australia (ACAA));
- **engineers** (represented by the Institution of Engineers Australia (IEAust) and the Association of Consulting Engineers Australia (ACEA));
- **quantity surveyors** (represented by the Australian Institute of Quantity Surveyors (AIQS))
- **landscape architects** (represented by the Australian Institute of Landscape Architects (AILA)),
- **planners** (represented by the Royal Australian Planning Institute (RAPI)).

BDP's member associations have total members in excess of 80,000.

BACKGROUND AND SCOPE OF THE STUDY

1.0 TERMS OF REFERENCE AND SCOPE OF STUDY

The Commission is required to examine the future performance of commercial buildings, however the terms of reference provide no clear definition of performance.

In this context it should be recognised that the future performance of commercial buildings is determined by a design process under which architects and other design consultants take their instructions from clients or building initiators (to use the *Issues Paper* definition). In most cases the building initiator has only a short term financial interest in the project, relative to its life cycle, and may therefore be disinterested in its future performance.

1.1 Scope of the Study

Because these decisions are made by individual stakeholders, community interests are not addressed. Such public interests include -

(i) impact on public services and infrastructure through the life cycle of the project
(ii) community sustainability issues, eg the impact of the building initiator's priority for short term economic performance on the choice of construction materials, building services and construction techniques and consequent impact on -
  - air quality (ie impact on occupants of indoor air quality and impact on the environment of the outdoor air quality from the project)
  - life cycle energy consumption

- non energy related environmental impacts, eg biodiversity loss; other emissions from the product manufacturing process to air soil and water; etc.

(iii) culture and amenity - eg commercial buildings today largely define the form and quality of the urban environment - given the priorities of building initiators, what is the future performance of commercial buildings in defining the cultural value and amenity of the public urban environment.

(iv) social costs / benefits to the community as a whole - eg

- social impacts such as increased private transport use (congestion, pollution, accidents, other social on-costs) associated with provision of substantial car parking spaces within a building
- loss of solar gain from overshadowing neighbouring buildings
- creation of local high wind areas and wind tunnel effects
- glare from poor choice of materials.
- more abstract concepts such as the extent to which our built environment reinforces our cultural self-image making process - eg different cultural messages conveyed by cities such as Houston Texas (all tinted glass commercial office buildings) and European CapitalS (with urban planning and urban space defined principally by public buildings) - both make statements about the priorities of the respective cultures.
- role of government in determining the "landscape" in which private sector enterprises make economically rational decisions

There is now a considerable body of micro economic theory that addresses the relationship between the economic landscape created by governments and the behaviour of economically rational agents trying to act in those environments. This literature argues that what constitutes economically rational behaviour is always and inevitably context dependent. For example, where a building initiator is creating a commercial building as part of a broad property investment portfolio, that investor has to design and construct a building that balances the building's function and amenities against the breadth of its appeal. These are conflicting constraints. Ideally, any given tenant would like a building (or part thereof) which was exactly tailored to its purpose. However, to do so is a highly risky strategy because if that tenant leaves, the space is very unlikely to offer comparable "fit" to other clients. In other words, the tighter the "fit", the smaller the market niche and the higher the risk arising from not being able to let the space.

This conflict arises when the tenant is not known at the time of construction. Even when the tenant is known at the time of construction the risk is still there as circumstances and tenants change over increasingly shorter periods of time.

To offset this risk the building is made more generic to appeal to a wider market and so be easier to let. This lack of knowledge of tenant requirements also militates against the introduction of input saving technologies which are perceived as appealing to a smaller segment of the market. This is particularly the case where input saving technologies are associated with increased initial cost (borne by the building initiator) leading to decreased operational costs (borne by the tenant).

If the building initiator perceives there to be a limited market for, or appreciation of, input saving technologies, then to incorporate them into the building increases risk.

This situation has a direct parallel in the world of product manufacture. The introduction of extended producer responsibility in the Trade Practices Act has seen this distinction between successive owners of a product broken down. This has changed the "landscape" or "context" in which manufacturers conduct their risk assessments and consequently to a much greater emphasis on life-cycle evaluation of products. Effectively all "extended producer responsibility" does is prevent the introduction of conflicting constraints arising at each transfer of ownership through the product life-cycle.

The removal of the conflicting constraints which arise at each change of ownership, or between owners and tenants in the commercial property sector would go a long way towards creating the environment in which input saving technologies could be assessed on their economic merits.

BDP therefore submits that the study should adopt a wide definition of future performance which embraces the public interest and not be limited to economic performance, related to stakeholder interests.

1.2 Buildings

The definition provided by the Building Control Commission is narrow however, the general definition in the *Issues Paper* of "A building is a substantial structure designed to provide shelter and space for people and objects" would appear to cover all buildings.

It has been stated that "in the last 12 months it is estimated that up to 75% of commercial building works included some degree of renovation."(Lincolne Scott, 1996).

Because of this high proportion of renovation, BDP suggests that the study consider building renovation as well as new building work.

The *stylised representation of the design construction and operation of a commercial building* omits the most important task, ie the design brief. The representation also does not show any consideration of environmental issues by architects and engineers. It would be expected that architects and engineers make these considerations within the constraints of their brief from the client.

1.3 Building Designer

See Addendum 1

BDP recommends that, for government projects, the Government encourage the use of the appropriate building design professional, eg architect, engineer, landscape architect, quantity surveyor or planner, and the use of the specific term.

1.4 "Fit for Purpose"

BDP submits that the "fit for purpose" concept is not useful in the construction industry.

2.0 THE PERFORMANCE OF BUILDINGS

2.1 Different Dimensions of Performance

Question 2.1.1

Building performance is assessed by different people in the building cycle in different ways. Those who invest in buildings see them differently to those who occupy and operate businesses in them.

The stakeholder in the building assesses those criteria which are important to it. For example, the developer is interested in the initial cost and usually will not seriously consider running costs which are passed on to the tenant and which may be tax deductible by the tenant, but not by the developer.

The developer or owner is usually only interested in the time frame during which it has a stake in the building, eg for the developer this may only be the time taken to construct and sell the building. The owner/investor will be interested in the building while it has ownership and even in the case of long term ownership, may only be interested in its performance over a limited window of time, eg ten years.

The community is becoming increasingly aware of environmental considerations, energy performance and construction waste and thus these criteria are now starting to be included in corporate policies.

However, even though these factors may have been identified, usually initial financial performance is the pre-dominant criteria considered.

It is important that we look beyond the ratio of lettable floor area to capital cost and measure building performance taking into consideration -

- energy efficiency (eg reduced measured actual energy consumption or as energy use totally foregone by using passive systems in lieu)
- embodied energy
- air quality
- demands on public services and infrastructure
- use of non-renewable materials
- culture and amenity
- performance of occupants
- social benefits to community

Question 2.1.2

With the growth of property trusts, accountability requirements and better financial returns, more sophisticated performance indicators and methods are being required to assess the viability of buildings. For example, prior to a decision to purchase or construct a building, trust managers are commissioning detailed assessments or due diligence reports from quantity surveyors to enable them to make a considered decision on whether the property is or will be economically viable. These assessments are also useful for managing the property portfolio, particularly with regard to cash flow and for decisions on when to dispose of certain assets.

These assessments provide the client / decision maker with an overall and comparative score for the building and also break down the information by category and within different time frames.

However, as previously stated, even though other factors are identified, usually the decision is made on initial financial performance.

Consultants, eg quantity surveyors, conducting these assessments and property trust managers are building up data banks and property profiles. In most cases this is commercial in confidence information and not used on an industry basis.

Post occupancy evaluations are also conducted by some organisations, but usually theses are tools used by the relevant stakeholder to provide a management or accountability function or competitive advantage to that stakeholder and not provided to the industry data bank.

2.2 Environmental performance

Question 2.2.1

As noted in the aforementioned, generally the environmental aspects of building performance are identified and put on the agenda by concerned building design professionals, eg architects, engineers, quantity surveyors, landscape architects and planners, but in many cases there is some resistance to the incorporation of these aspects in the final decision, due to over emphasis on immediate costs rather than life cycle costs.

Unless cost advantages are significant and/or the pay back is clear and short term, these aspects will generally not be considered. Even with full information of the long term cost advantages, where it requires additional up front cost, it may be a case of the funding not being available at that time. Also, if the costs are to be largely borne by the tenants / occupiers it is often difficult to include the expenditure. To date, lower energy related outgoings have not generally been seen as a significant marketing factor by the building owner.

Electro-Magnetic Radiation (EMR) and air quality issues (IAQ) are starting to be recognised and considered; EMR often in the first instance because of interference problems with electronic equipment. Links between IAQ and health and productivity are also now becoming better understood.

Question 2.2.2

Energy is measured and assessed by building owners and managers but currently in a fragmented and unco-ordinated way (see response to Question 2.1.2).

Little industry comparative data is available or published. Initial work on commercial building rating schemes has suffered from this lack of objective performance data. This may change as new rating schemes are introduced and data is collected and made available for comparative purposes (eg SEDA Commercial Building Greenhouse Rating Scheme).

This is not a well understood process and there should be more research, and more behavioural research in this area. We are all wanting to improve/change something we don't understand well enough. The first task should be to understand it.

2.3 Life-cycle costing

Question 2.3.1

Life cycle costing may be put on the agenda by concerned building design professionals, eg architects, engineers, landscape architects, quantity surveyors and planners, but in many cases there is some resistance to the incorporation of these aspects due to over emphasis on time frames relevant to the project initiator or the particular stakeholders. Life cycle cost assessments are more likely to be requested by long term building owners such as government, property trusts, hospitals, etc. Significant work has recently been done at Homebush Bay on Olympic projects such as Stadium Australia.

Private investors and developers are more likely to look at windows of time which are relevant to their financial interest in the particular project. This short sighted view reduces the long term performance of commercial buildings as it fails to plan for the future. ***By assessing over these shorter time lengths, the public costs and community costs are not included and only the self interests of certain private stakeholders are considered.***

Question 2.3.2

The impediments to use of life cycle costing are -

- ***initiator is usually not a long term stakeholder***
- ***usually more than one stakeholder has a major interest in the building, eg owner/investor and tenant***
- ***cost responsibility for much of the life cycle costs is not borne by the developer or owner but the tenant and this places an emphasis on initial cost***
- ***tenant costs are business expenses and tax deductible***
- ***tenant's leases are becoming shorter***
- ***building management planning cycles are shorter - maximum 30 years because community expectations and use may change (the maximum 30 years would be an exception with most building management cycles less than half this period)***
- ***difficulty in predicting future changes in technology and community attitudes***

Question 2.3.3

As noted previously, stakeholders usually compare costs over windows of time relevant to their interest to assess a future building's performance.

3.0 INPUT SAVING TECHNOLOGIES

Question 3.1.1

There is a wide range of inputs to building construction and ongoing operations. The five categories of energy consumption associated with the construction, maintenance and operation of buildings are -

- material (embodied) energy
- construction energy
- system (operational) energy (HVAC lighting etc)
- maintenance energy

- business / production energy

Currently, buildings tend to be measured mainly for their system energy. This is possibly because system energy is easier to be measured, ie it may be measured in a number of ways based on metered consumption and usually related to a measure of "production" (per m, per person etc). Metered energy can be converted back to primary energy (ie fossil fuel MJ) and then converted to equivalent mass of carbon dioxide generated.

Although most building design professionals are trained to take account of and keep up with the latest technologies, the final decision taken by the client is usually taken having regard to the financial costs of the project relevant to the stakeholder's interest.

Many problems relate to measurement and the industry is looking for ways to measure performance, while all the time we need to better understand what we are trying to achieve.

Question 3.1.2 and 3.1.3
The energy consumption of new and existing commercial buildings can be reduced without compromising the facilities provided. In fact, in many cases, the extra attention paid to a building in an effort to reduce energy often results in improvements to other aspects.

Occupational behaviour provides potential for energy savings of a similar order to savings achieved in the provision of the services and the building, but are often not achieved because the occupier does not initiate the building, eg tenant in a speculative building. In some cases advanced systems have been provided in buildings but the occupiers have not maximised the potential savings for a variety of reasons, eg not familiar with the buildings' technology or trained in its use.

In order of priority and opportunity for improvement, the following approach is the most effective for achieving energy savings in buildings -

(i) Monitor and report energy consumption - attributed usage to a standardised measure (per m or per person) and attribute where possible to those responsible for consumption.
(ii) Building maintenance - appropriate maintenance and building "tuning" has the most significant potential to reduce consumption.
(iii) Housekeeping - low and no cost operational changes to reduce consumption
(iv) Energy saving investment - changes to systems, controls, etc. to reduce energy consumption and improve the efficiency of its use.

The great majority of energy saving measures are designed primarily to reduce operational costs. Often the drive is to reduce energy and increasingly to mitigate greenhouse gas generation. Whatever the driver is, the process is measured in terms of cost, energy units and cost savings. This is now changing to cost energy and greenhouse units, and cost savings. The primary measure is and will remain costs and cost savings.

Question 3.1.3

3.2 Incentives to implement input saving technologies

Question 3.2.1

Energy costs are a primary factor in the uptake of initiatives to reduce energy consumption. On the other side of the equation, the cost of implementing initiatives is also an issue. Good maintenance can cost more, technology attracts a cost premium, there is a cost associated with active energy management. Many are unwilling or unable at the time to commit the resources to effectively monitor, report and manage energy usage.

With this in mind some energy supply organisations are using "shared saving schemes" or "performance contracting" which provide assets such as light fittings to obtain a contract for the future maintenance of these resources and maintain or increase their market share of the supply of energy.

This is a positive incentive for the installation of input saving technologies by lowering the cost to the developer of the building envelope and hopefully forcing recurrent energy costs down with more efficient technology. However, these schemes do take control for energy savings away from the user.

Another option that is gaining popularity is to separate out the energy services in a building from the development financing. This lowers the initial development cost and allows more efficient energy services (lighting, hot water, air conditioning, lifts etc) to be factored in over the life of the building by a third party service provider.

Question 3.2.2

Market reforms and competitive pricing at first resulted in lower energy prices which fostered interest in chasing savings. Because these low costs did not reflect real costs to the community and the environment it had a negative, rather than positive, impact on the use and conservation of energy.

Now rising market prices are challenging organisations to manage energy usage to combat energy budget shortfalls. This is a new dynamic and will take some time to filter through from building operation to new building construction.

Currently these costs do not reflect real costs to the community and the environment and thus, in that regard, may have negative, rather than positive, impacts on the use and conservation of energy.

Even taking account for rising market prices of energy, there is usually no process to return any profit-share to the community to compensate for costs to the environment.

There may be scope for certain returns to the community using a model similar to that used by the Victorian Government in which some gains from the Casino are required to be returned to the Government to assist social problems in the community as a result of gambling. (eg Community Benefit Rebates)

3.3 Demand for energy efficient buildings

Question 3.3.1

In selecting a building to invest in, or a tenancy to lease, its energy efficiency is not a first order consideration for most (Lincolne Scott, 1996).

For building investment, the primary considerations are associated with cost, finance and potential return on investment (capital growth and occupancy).

For tenants, considerations are primarily about costs (rental) and amenity.

To date reliable and meaningful historical energy consumption data has rarely been available and rarely sought to support the decision process. However, with the growth of property trusts and large property portfolios this data is now being identified.

Question 3.3.2

Energy efficiency improvements during fitout works are rarely considered although the incidence is increasing. To date the opportunity for effective change has usually been small and limited to lighting control or switching. Previously the existing building envelope was a major limiting factor for opportunities during fitout, but with technology developments the opportunities are not now so limited.

Question 3.3.3

To date, property marketing and sales organisations have taken very little consideration of the energy efficiency of buildings. As stated elsewhere in this submission, with the increasing importance of property trusts and the need for accountability and management of cash flows, these issues are now starting to be identified. Property marketing and sales organisations do not consider a building's potential to be modified to be more energy efficient. However, the more sophisticated reports from building design consultants, eg quantity surveyors, architects and engineers, may identify these issues.

3.4 Impediments to incorporating input saving technologies

The Availability of Information

Question 3.4.1

There is a wide range of information needs for the various participants with the building design professionals having access to the highest level of independent information. Manufacturers also have much information relevant to their own particular product and operators have information based on the experience of their particular projects.

Most of this information is not usually provided to the industry as a whole and in many cases is treated as "commercial in confidence", and used to provide a competitive edge in the marketplace for the relevant stakeholder.

Social impediments affecting the uptake by developers, tenants and the public may be -

- the small number of existing accessible ESD commercial buildings in urban areas which might provide public awareness / acceptance / main streaming of the availability of developed ESD techniques
- the established consumer expectations about comfort and performance of conventional commercial buildings which may not be in line with the achieved response of passive and low energy commercial buildings

There is some information available primarily for the United Kingdom (ETSU) and North America that is worthy of considering (Lincolne Scott, 1999).

Question 3.4.2

In marketing their products, manufacturers provide such information on their products to architects, engineers, etc and these building design professionals can then make their own assessment with regard to their experience, on whether to incorporate the product or technology in the design of the project. ***The information that is available is not in general terms transmitted to anyone outside this "design loop" and in many cases may not be easily understood by anyone outside this "design loop".***

A review of overseas experience in developing and applying mechanisms to encourage energy efficient renovation (Lincolne Scott, 1996) identified a number of programmes of relevance to Australia and worthy of further study. These included -

- Energy Design Advice Scheme, United Kingdom
- Crown Energy Efficiency Loan Scheme, New Zealand
- Federal Building Initiation, Canada
- Energy 2000 - IP Bau Action Plan, Switzerland
- Energy Efficiency Best Practice Program, United Kingdom.

Question 3.4.3

Government's role should include -

- putting emphasis on the design process in the procurement process
- government procurement of consultant services based on the consultant's qualifications and expertise (eg use of the Qualification Based System (QBS) in the selection of consultants)
- government as a model client setting an example by adopting IST's in all government projects
- introducing legislative changes such as efficiency standards, and others which encourage efficient resources usage
- show casing best practice projects
- developing standards which meet the community's wider value needs and encouraging, enticing, haranguing and shaming to achieve compliance
- such government programmes as *Energy Smart Companies* (Vic), *Greenhouse Challenge* (Federal) and *Energy Partners* (NSW) could be further developed and "tuned" for tangible outcomes.
- collection and dissemination of information - this has a number of different dimensions, eg
  "how to" and what others are doing, and
  census / performance type information, meaningful industry bench marking, etc.
- working with industry groups to promote industry initiatives such as the BDP *Environment Design Guide,* Australian Building Energy Council, etc.

Industry associations and research institutions could assist by -

- show casing best practice projects in association publications and by including such criteria in association award programmes
- encouraging debate, review and criticism of projects to increase the level of awareness within the membership and the wider community
- better formal linkages between industry associations and research institutions

BDP publishes the BDP Environment Design Guide which is a subscription service on environmental issues specifically tailored to the needs of Australia's building design professionals. It provides reliable, timely and accessible information; all written with the practitioner in mind. The notes cover the whole range of relevant environmental issues and design solutions and the case studies showcase and critique the very best in Australian environmental design.

BDP's member associations have continuing professional development programmes for their members and such issues may be included in their programmes from time to time.

3.5 Hidden Costs and Benefits

Question 3.5.1

As noted previously in the paper, the building design professional would, in the design process, identify these aspects; however the client's decision is usually based on the financial viability with regard to initial costs.

The tools which firms use to assess the viability of investment in the adoption of IST's vary from calculation tools such as spreadsheets based on first principles and measured outcomes, to structured energy audit tools and costing databases to estimate likely costs associated with efficiency changes. ***The level and sophistication of tools depends on who is performing the task and the client's budget. For example informed building design professionals will have access to the tools, either in-house or will have access to someone with the specific tools. However, even with the most sophisticated information, these consultants can only operate within the scope of the brief provided by their clients.***

Question 3.5.2

See comments on Question 3.2.1.

3.6 Using discount rates to account for risk

Question 3.6.1

Currently, the most significant risk issues in the uptake of energy saving changes are -

- ***Tenure, length of tenancy - either from the owner or tenant's perspective? Average lease periods are becoming shorter***
- ***What are long term energy prices going to do? We have seen low prices that are now rising.***
- ***Community expectations and changes***

Uncertainty in these issues often means that either nothing is done or that a limited investment is made, based on the current situation.

Question 3.6.2

3.7 Other Issues

Question 3.7.1

The trend towards competition policy and compulsory competitive tendering has been interpreted as competition based on cost alone which has led to clients increasingly selecting building design professionals on the lowest cost.

Recent research by the CSIRO indicates that consultants and contractors alike perceive that over the past 15 years -

- there has been a decline in the standard of design and documentation
- there has been a decline in the level of fees paid to consultants
- the quality of design and documentation influences the tender price submitted
- the quality of design and documentation influences the project time allowed

This research appears to suggest that by compromising the standard of design and documentation with reduced consultants' fees, clients may be increasing the cost and time taken to complete the project.

BDP submits that, had the CSIRO research project been extended, it would also have shown that the uptake of financially viable IST's and the future performance of buildings is influenced by the quality of design and documentation and that this in turn is influenced by the current processes of developing and procuring buildings.

BDP recommends Qualification Based Selection (QBS) as the preferred method of selecting building design professionals (see attached brochure).

Question 3.7.2

Yes, the split incentive of those who build and those who invest and those who operate, affects the up-take of IST's.

Question 3.7.3

Gross leases are still common with little or no indication of energy consumption back to those who are directly involved. Net plus outgoings are becoming more prevalent.

Question 3.7.4

Budget separation is often a problem in locking in resources and / or capital for energy efficiency investment. This has become a greater problem for many in outsourced arrangements. Many of these arrangements are early in the evolutionary scale. Issues like managed energy efficiency where responsibility for consumption is unclear, and capital and reserved investment are not defined in terms of who pays and who benefits, mean that a lot of large corporate (public and private) real estate organisations are not seeing very many effective energy efficiency improvements.

Question 3.7.5

For many in business, energy costs are a potential tax deductable business cost.

Tax deductibility in building or renovation could be linked to -

- ***installation of energy plant and systems***
- ***building energy rating***
- ***design complying with a voluntary energy code***

This mechanism would focus attention on the connection between energy efficient building and renovation and ongoing operational costs.[2]

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[2] From *Study into the Energy Efficient Renovation of Commercial Buildings*, Lincolne Scott Assets & Energy Management, May 1996.

More favourable depreciation rates for equipment associated with energy efficient building and renovation could be a mechanism for encouraging the installation of such equipment, bridging the dislocation between capital investment and operational costs.

Some have suggested that proposed GST tax reforms may militate against energy savings in that to avoid multiple accounting and financial transactions, there could be an increase in large management contracts where responsibility and control of issues sold as energy could be lost to the client.

3.8 Facilitating the adoption of input saving technologies

Question 3.8.1

Government provided rebates for the installation of energy efficient technologies in building, and in particular renovation, have been applied with varying degrees of success world wide. See Addendum 5.

Rebate schemes can provide effective seed capital for incorporation of energy efficiency, encouraging a longer term outlook in renovation and breaking the dislocation between capital cost and operational cost.

State appendices in the Building Code of Australia identify specific state requirements including in some cases energy efficiency requirements.

Question 3.8.2

The cost, perceived or otherwise, of sourcing professional energy related advice is a barrier to the consideration of energy efficiency.

A rebate arrangement to subsidise the cost of energy related advice would encourage greater use of knowledgeable advice and promote more energy efficient renovation outcomes.

Access to capital for investment in energy efficiency is often a barrier.

Third party finance arrangements for investment in energy efficient building have been slow to gain favour in Australia but are a key mechanism in enabling investment in energy efficiency in Europe and especially North America. Such arrangements are often funded out of savings and as such are essentially self funding. Barriers to the take up of this approach in Australia should be explored and addressed. (Lincolne & Scott, 1996).

As previously mentioned, another option that is gaining popularity is to separate out the energy services in a building from the development financing. This lowers the initial development cost and allows more efficient energy services (lighting, hot water, air conditioning, lifts etc) to be factored in over the life of the building by a third party service provider.

Question 3.8.3

The Australian Building Energy Council is a response by industry (encouraged by Government) which hopefully will encourage and facilitate the up-take of IST's in the design, construction and operating phases of commercial buildings.

Question 3.8.4

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EMET Consultants Pty Limited and SOLARCH Group (May 1999) *Baseline Study of Greenhouse Gas Emissions from the Commercial Buildings Sector with projections to year 2010.*

Gunnar Hubbard, *Performance-Based Fee Contracts: Doing it Right the First Time.* See Addendum 4.

ADDENDUM 1

1.3 Building Designer

Although not defined in the *Issues Paper Glossary*, BDP notes that the title "building designer" is used throughout the document.

BDP recommends that use of this term is so general that it is meaningless. The term "building designer" or "consultant", does not guarantee that the person has any specific qualifications or experience and hence use of the name gives no protection to the consumer and no information to a prospective client on the person's capability to perform a certain task - eg a building designer could be an architect, builder, draftsman, builder's secretary, or anyone else who likes to "design".

BDP recommends that, for government projects, Government encourage the use of the appropriate building design professional, eg architect, engineer, landscape architect, quantity surveyor or planner, and the use of the specific term.

ADDENDUM 2

1.2 Fit for Purpose

The terms of reference for the study refer to "indicators of the extent to which a building is 'fit for purpose'".

"Fit for purpose" is a term imported into the construction industry from the manufacturing industry. A fundamental requirement for contracts based on the provision of goods which are "fit for purpose" is that the customer or consumer is able at the outset to precisely define the "purpose".

In the construction industry attempts have been made to apply the concept to the provision of buildings, which are essentially complex systems rather than relatively easily defined products. The problem of extrapolating the term to the construction industry was recognised in 1986 when it was decided to exempt engineers and architects from section 74(2) of the *Trade Practices Act* which states that goods and services must be fit for the purposes for which they are sold.

The largest public sector client, the New South Wales Department of Public Works and Services has recognised the problem of using the term "fit for purpose" as a description, and deleted the "fitness for purpose" clause in its *Consultant Agreement*.

BDP submits that the "fit for purpose" concept is not useful in the construction industry.

ADDENDUM 3
CASE STUDIES

ADDENDUM 4

[redacted]