The University of Sydney
Department of Architectural and Design Science

Ms. Vicki Thompson

Administration Officer
The Productivity Commission
LB2 Collins Street East
Melbourne
Vic 8003

From David Rowe FIE Aust. M. AIRAH
Honorary, Research Associate
Department of Architectural
and Design Science (G04)
University of Sydney
NSW 2006 Australia

Telephone +612- 9351 2490
Facsimile +612 9351 3031
email: david@arch.usyd.edu.au

18 October 1999

Dear Ms Thompson

My colleagues Associate Professor W. Julian and Mr. Bruce Forwood and I sent a submission to the Commission's Improving the Future Performance of Buildings Study some weeks ago. It included a recommendation for providing incentive to better energy performance.

Further thought about the issue has led to further definition of this recommendation as described in the attached addendum. We hope it is not too late for consideration.

1 also enclose a copy of summary notes from a panel discussion at the HybVent International Forum '99 held here two weeks ago. The discussion topic was means of promoting natural and hybrid ventilation. The discussion canvassed some interesting barriers which need further consideration and remediation if serious inroads are to be made in reducing energy required for control of the thermal environment in buildings.

Yours sincerely

David Rowe

ADDENDUM TO SUBMISSION TO THE PRODUCTIVITY COMMISSION INQUIRY INTO THE FUTURE PERFORMANCE OF BUILDINGS: A PROPOSAL FOR PROVIDING INCENTIVES TO THE INTRODUCTION OF INPUT SAVING TECHNOLOGIES

David Rowe, Warren Julian and Bruce Forwood
Department of Architectural and Design Science, the University of Sydney, NSW 2006

In our original submission it was argued that the public as represented by Government could offer a tax free bounty to an individual or organisation that brought about a reduction in its energy consumption for a year compared to the previous year. It was also recommended that consideration be given to introduction of trading in carbon credits to reward positive efforts to conserve energy and to penalise developers who produce projects with energy consumption higher than a reasonable benchmark. Further consideration suggests that it might be possible to combine both approaches in an incentive scheme that would be voluntary equitable but largely revenue neutral to reward corporate good citizens and to penalise those who waste energy.

Trading in carbon credits is a concept widely discussed as a market led approach to energy conservation and is one that could provide significant incentives in very large and highly concentrated industries. The building and real estate industries are, however diffuse and the allocation of equitable carbon credits could be expected to be a difficult and costly exercise.

A simpler approach could be based on the Commercial Buildings Energy Rating scheme newly launched by the NSW Sustainable Energy Development Authority. The rating system could be used to benchmark performance of an energy consumer with rewards and penalties allocated in accordance with the rating level achieved.

On this basis an equitable system could be structured as follows:-

- Government legislate a requirement that participating building industry customers lodge a certified energy rating with the supplier(s) within a period of grace of say twelve months.
- Energy suppliers adjust billing in accordance with the table below:-

Rating	**Bill adjusted by**
1 star	Penalty addition say 50 percent
2 star	Penalty addition say 25 percent
3 star	Neutral
4 star	Bonus reduction say 25 percent
5 star	Bonus reduction say 50 percent

- The scheme would be voluntary. No consumer would be compelled to provide a rating but lit the absence of one the energy supplier would be obliged to apply the maximum penalty amount of 50 percent addition.

HYBVENT FORUM99: NOTES FROM CONCLUDING PANEL DISCUSSION

At the conclusion of the HybVent Forum '99 held at the University of Sydney on 28 September a panel discussion, chaired by Jeff Symons, Deputy Head. CSIRO Division of Building Construction and Engineering addressed the question "How to promote hybrid ventilation"? The following are brief notes taken during the discussion.

- Yeo asked how do we address the question of cost of hybrid ventilation above a baseline cost of mechanical equipment?
- Delsante replied high summer temperatures in Sydney/Melbourne demand mechanical cooling.. Need not cost more money, just used in a different way. The need is to consider the whole building cost; to sell the concept on the basis of life-cycle cost.
- Symons asked have cost analyses been carried out in Europe?
- Heiselberg replied that the subject has not been widely, explored. Practitioners try to put some money from mechanical systems into the building. Not aware of life-cycle analyses.
- Aynsley commented on need to wean people away from full air conditioning.
- Symons said cost analyses could help uptake.
- A developer (Johnson?) said he needs to be able to sell the concept to end users; also there is a need for Government to support this technology. It is hard to get local government approvals and costs more in time.
- Further comment: in Europe there is also additional difficulty with approvals. That performance requirements are not well defined adds to complexity of the approval process. Appropriate standards are not available. Also there are problems of air pollution and noise in cities.
- Aynsley remarked on a large building project in Singapore where the street level plaza is to be enclosed for pollution control.
- Henriques commented that there is a need to change the culture to persuade people to accept hybrid ventilation as equivalent quality accommodation. Needs education and media exposure to persuade public to go this way. Also fire protection as specified in the Building Code of Australia (BCA) may be a barrier to hybrid ventilation.
- Heiselberg responded that for hybrid ventilation buildings need to be open to promote air flow, fire authorities want compartmentalisation. There is a need for performance oriented regulations.
- Several unidentified speakers drew attention to their difficulties in meeting local government and BCA requirements.
- Aynsley suggested there is a need for better wind data.
- An 1EA Annexe 27 project on a method to analyse ventilation systems was suggested as bearing on this issue.

Summary: As well as technical issues of thermal comfort and air. quality,. there is a need to demonstrate effective methods of heat and smoke management and competitive cost and quality; to raise public awareness; and to create a sympathetic attitude in local government. Current local government regulations may need sympathetic review and adjustment.