



COMMONWEALTH OF AUSTRALIA

# Official Committee Hansard

JOINT COMMITTEE ON PUBLIC WORKS

**Reference: CSIRO Clayton (Eastern Precinct) development works**

THURSDAY, 8 JULY 1999

OAKLEIGH

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**JOINT COMMITTEE ON PUBLIC WORKS**

**Thursday, 8 July 1999**

**Members:** Mrs Moylan (*Chair*), Mrs Crosio (*Vice-Chair*), Senators Calvert, Ferguson and Murphy and Mr Forrest, Mr Hollis, Mr Lindsay and Mr Ripoll

**Senators and members in attendance:** Mr Forrest, Mr Hollis and Mr Lindsay

**Terms of reference for the inquiry:**

CSIRO Clayton (Eastern Precinct) development works, Victoria.

**WITNESSES**

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**Committee met at 1.27 p.m.**

**TEMPORARY CHAIR (Mr Lindsay)**—I declare open the public hearing into the proposed CSIRO Clayton (Eastern Precinct) development works in Victoria. At short notice, our chair, Judi Moylan, has had to be in Canberra this afternoon. She did intend to be here and she sends her apologies.

This project was referred to the Public Works Committee for consideration and report to parliament by the House of Representatives on 12 May 1999 with a budget of \$28 million. In accordance with subsection 17(3) of the Public Works Committee Act 1969, in considering and reporting on a public work, the committee shall have regard to:

- (a) the stated purpose of the work and its suitability for that purpose;
- (b) the necessity for, or the advisability of, carrying out the work;
- (c) the most effective use that can be made, in the carrying out of the work, of the moneys to be expended on the work;
- (d) where the work purports to be of a revenue—producing character, the amount of revenue that it may reasonably be expected to produce; and
- (e) the present and prospective public value of the work.

This morning the sectional committee inspected the CSIRO Manufacturing Science and Technology site at Preston, the CSIRO Petroleum site at Syndal, the CSIRO Manufacturing Science and Technology facilities at Clayton, and the site proposed for the redevelopment and new construction at Clayton. This afternoon the committee will hear evidence from the CSIRO.

[1.30 p.m.]

**BOSCI, Mr Peter John, Business Manager, CSIRO Division of Petroleum Resources**

**CAMERON, Dr Murray Athol, Deputy Chief of Division, CSIRO Mathematical and Information Sciences**

**COOK, Mr Ronald Roy, Officer in Charge—Melbourne Branch, CSIRO Telecommunications and Industrial Physics, National Measurement Laboratory**

**HICKS, Mr Alan Russell, Project Manager, CSIRO**

**MOODY, Mr Trevor Laurence, Assistant General Manager, CSIRO Corporate Property**

**SARE, Dr Ian Richard, Chief of Division, CSIRO Manufacturing Science and Technology**

**MACDONALD, Mr John Andrew, Director, Architect, Eggleston Macdonald Design Inc. Pty Ltd**

**TEMPORARY CHAIR**—Welcome, gentlemen. The committee has received a submission from the CSIRO dated May 1999. Does anybody wish to propose any amendments?

**Dr Sare**—Yes, Mr Chairman, I have a few short amendments. On page 5, paragraph 35, the word ‘Infrastructure’ should be changed to ‘Built Environment’. On page 7, paragraph 43, there is a dot point to be added which reads:

- . Ceramic Fuel Cells (a consortium with energy sector agencies and companies developing an efficient and environmentally sound fuel cell for generation of electricity from fossil fuels).

On page 15, paragraph 86, under the words ‘Other Authorities and Organisations’, two dot points are to be added:

- . Metropolitan Fire Brigade
- . Victorian Environment Protection Authority.

On page 15, paragraph 87, substitute the number 16,400 for 15,500; 53% for 49%; and 47% for 51%. On page 15, paragraph 88, substitute the number 7600 for 9300, 1480 for 1400, and 7320 for 4800. Finally, on page 28, paragraph 195, substitute the word ‘respective’ for ‘perspective’.

**TEMPORARY CHAIR**—Thank you, Dr Sare. It is proposed that the submission as amended be received, taken as read and incorporated in the transcript of evidence. Do members have any objections? There being no objection, it is so ordered.

*The document read as follows—*

**TEMPORARY CHAIR**—Would a representative of the CSIRO now read the summary statement after which we will proceed to questions.

**Dr Sare**—This proposal, brought before the Parliamentary Standing Committee on Public Works, is for the construction of new research accommodation and refurbishment of existing facilities in the Eastern Precinct of the CSIRO site at Clayton, Victoria. The CSIRO requires appropriately designed and equipped research facilities that will provide safe, healthy and efficient working conditions for its skilled staff. These staff direct and undertake a wide range of research to meet national priorities, according to CSIRO objectives, and to approved programs.

As the committee is aware, CSIRO is progressively upgrading many old, substandard and inefficient laboratory buildings as funds become available and constructing new facilities, as required, to meet changing research directions and priorities. In recent years the committee has examined proposals by CSIRO for Black Mountain in the ACT, Clayton in Victoria, Pinjarra Hills in Queensland and Bentley in Western Australia, and reported favourably on them. Following parliamentary approval, these developments are now proceeding or have been completed.

The proposed works will provide research and support facilities for the Victorian based activities of four CSIRO divisions: Manufacturing Science and Technology, Mathematical and Information Sciences, Telecommunications and Industrial Physics, and Petroleum Resources, and for CSIRO Information Technology Services. A key objective of the CSIRO property management plan is to consolidate CSIRO research activities to fewer, larger research sites. This proposal will consolidate the Melbourne based activities of each of the divisions concerned on the Clayton site.

This proposed development will totally replace all resources on sites presently owned by CSIRO at Preston and Syndal and occupied, respectively, by CSIRO Manufacturing Science and Technology and CSIRO Petroleum Resources. It will also replace facilities currently leased for CSIRO Mathematical and Information Sciences at Carlton and CSIRO Information Technology Services located at Blackburn Road, Clayton. The Preston and Syndal sites will be offered for sale and the leases at Carlton and Blackburn Road, Clayton, surrendered upon completion of the proposed development.

When complete, the proposed Eastern Precinct development will accommodate 370 staff. Almost 200 of these staff are currently located at Clayton; of the others, 100 will relocate from Preston, 33 from Carlton and 30 from Syndal. The development will include the long overdue refurbishment of the outdated, inadequate, 35-year-old David Rivett Laboratory, continuing CSIRO's program to provide and maintain high quality modern facilities appropriate for conducting scientific research and development activities. The proposed accommodation will comprise modern research laboratories, service and equipment rooms, research, management and administration offices, modern computer facilities and open plan work areas, seminar and meeting rooms, together with industry scale technical bays for large scale process rigs.

The co-location of complementary research divisions on the Clayton site will enhance existing and generate new opportunities for research interaction. It will permit sharing and

optimise the use of equipment, generate administrative efficiencies and enhance staff access to appropriate amenities, including extensive library services, meeting rooms, canteen, an existing auditorium and child-care centre.

The estimated cost of the proposed development is \$28 million. Construction is planned to commence in early 2000, with completion and occupancy in late 2001. The proposed development of approximately 16,400 square metres gross floor area consists of the following facilities: research facilities, new and upgraded laboratories and laboratory offices, 7,600 square metres; new process bays, technical bays and support areas, 1,480 square metres; shared new and upgraded facilities, library, canteen, foyer, reception, seminar room, administration, management, plant and gallery space, 7,320 square metres. There are also associated site works, roadworks, car parking, engineering and communications services and landscaping.

The development aims to provide all of the facilities necessary to conduct leading edge research within a comfortable and efficient working environment conducive to the interaction of staff, their research visitors and collaborators, and providing medium- and long-term flexibility and adaptability. The design will maximise the use of natural light. Passive energy conservation measures will be incorporated into the building and landscape design, with active measures in the mechanical, electrical and hydraulic services design. Siting of the complex conforms with the general principles of the site master plan.

In developing this proposal, CSIRO and its consultants have contacted all interested groups, including CSIRO staff and unions and those local authorities having statutory responsibility over the locality and services. General support for the proposal has been received from staff, government and industry organisations. The proposed design fully meets the CSIRO functional brief and conforms with the technical requirements of local authorities. It will be designed and constructed according to the building code of Australia, relevant Australian standards and appropriate laboratory codes.

CSIRO believes that the complex will provide an appropriate workplace that will stimulate and promote research and development activities and further enhance opportunities for conducting national and international research consistent with its primary functions and long-term objectives. CSIRO is satisfied that the proposed development is the most appropriate, timely and cost effective way to provide safe and efficient accommodation for the staff of the various CSIRO divisions concerned and to meet their joint research needs in Victoria. CSIRO therefore submits the proposal to the committee for examination and seeks its endorsement.

**TEMPORARY CHAIR**—Thank you, Dr Sare. We will now proceed to questions and I would like to invite Mr Hollis to begin.

**Mr HOLLIS**—Thank you, Mr Chair. Actually, I do not have many questions. I just want to put on the public record that I have seen CSIRO sites all around Australia and I think that the work that the CSIRO does for Australia, for industry, for government and for others, is so important. Quite frankly, I am always appalled when I go into some of the facilities where world-class research is being carried out in appalling situations. I think we as the government, we as citizens, owe the CSIRO very much.

Having said that, Dr Sare, I take it that CSIRO does not believe small is beautiful because you are consolidating into the one area. For the public record, I wonder whether you could give a bit of a run-down on the advantages you see in the CSIRO case of large being beautiful instead of small being beautiful.

**Dr Sare**—There are essentially two particular reasons why the ‘large is beautiful’ approach is adopted by CSIRO. Firstly, there are very clear and distinct synergies that develop when researchers are co-located. When groups come together, one finds that, through the informal mechanisms of people working shoulder to shoulder, meeting in corridors, meeting in canteens and libraries and the like, new research ideas get sparked by people talking together and working together very closely. The thrust is consistent with the broader policy of seeing research providers come together through the establishment of cooperative research centres which frequently see non-university researchers co-located with, or adjacent to, university campuses. CSIRO recognises that enormous benefits derive from groups coming together.

In the other sense, particular advantage derives from efficiencies and effectiveness in the support of research activities. Every individually located research group invariably requires certain minimum support facilities, such as reception, library, generally a workshop, canteen and the like. When these groups that might be separately located are drawn together, one can realise administrative efficiencies by not having to double up with such facilities. That is one of the primary reasons behind CSIRO’s desire to see groups co-located on the one site.

**Mr HOLLIS**—I noted from your opening comments that there has been fairly extensive consultation with staff, unions, state government and other government bodies and they all seem to be favourably disposed. What about the local government areas of Preston and Syndal? What has been the reaction of the local government people?

**Dr Sare**—There has initially been some negative reaction from the city of Darebin, the local government area that covers the suburb of Preston. Concern from a Darebin council spokesperson was expressed in the suburban newspaper that there would be the loss of some employment from that particular part of Melbourne. However, the council is fully aware of the reasons behind CSIRO moving the group to another part of metropolitan Melbourne and is now working closely with CSIRO to identify alternative uses for the site. I believe Mr Moody has had some particular contact with the council and may be able to further amplify that.

**Mr Moody**—People from the Corporate Property Group have been in contact with the council and we have a consultant team working with the council to develop a philosophy for the best use of the site in the longer term.

**Mr HOLLIS**—If I understand what you are saying, when they are vacated the leases will either be allowed to expire or the property will be sold?

**Dr Sare**—That is correct.

**Mr HOLLIS**—Will CSIRO get the profits of any sale or will it go to consolidated revenue?



**Dr Sare**—The return on any sale of land does go back to CSIRO. In fact, in the long term that will help fund the current development project here at Clayton.

**Mr HOLLIS**—I note that fairly extensive car parking facilities are being provided, but what is public transport like to the site if people wanted to come by public transport?

**Dr Sare**—Public transport to the environs of Monash University and the CSIRO site is not as good as in some other parts of Melbourne. The university and the CSIRO facility adjacent to it are serviced by buses but the motor vehicle is the primary mode of transport that people use to get to work. Accordingly, we have the fairly extensive car parking facilities.

**Mr HOLLIS**—That is all I have at the moment, Mr Chair.

**TEMPORARY CHAIR**—Thank you, Mr Hollis. Mr Forrest?

**Mr FORREST**—First of all, Dr Sare, can I just say thank you very much for the tour. It has been good to be reminded of the work the CSIRO does and for my side it has been good to be reminded about nanometers and angstrom numbers and all those other quantum physics things that I have long since forgotten. I have a tradition of going straight to the cost estimate, and we can get through this confidential estimate that has been provided without referring to figures. I am a bit curious about the contingency and escalation allowance which is equivalent to 12 per cent of the accumulated sum before applying it. I am wondering what you think you might have forgotten about to allow for such a sizeable contingency. Also, whilst someone is answering that question, there are no allowances for the relocation costs of the various items of equipment that we have seen today that have to go to other sites in Australia and be co-located as well. Firstly, the contingency: why so much?

**Mr Moody**—There is an item in the confidential cost estimate which is a contingency and escalations allowance. That is made up of a contingency which we normally run at this early stage of design, being five per cent of the current estimate for design purposes. As the design develops, changes can occur and, as we gather more detail, whether it is more money that has to be spent on servicing the building or some other refinements that need to be made to the design, by the time we finalise this that design contingency almost historically would fall to zero by the time we go to tender. We also have that five per cent allowance for construction contingency, which addresses all of the difficulties that may occur during the construction process. We are excavating the ground and we may find conditions on the site that are not necessarily reflected in geotechnical reports. There may be other issues that need to be addressed in the construction program that add to the cost of the facility. So what we have attempted to advise this committee is that we have made an allowance for all of those almost unknown issues that may occur during the design and construction phases of the project.

We have also built in an escalation allowance to give you an idea of the \$28 million as being an outturn cost. We understand that the escalation allowance is based on anticipated increases in prices from now to completion of the project of about two per cent per annum and that allowance has been built into the estimate. So that reflects the total cost of the constructed facility as we envisage it and it should be a worst case situation.

Relocation costs are not included in the estimate and we are currently refining estimates for that work. You have seen the amount of equipment that needs to be relocated from respective sites to Clayton, the servicing that needs to be provided, and just connecting up those services does cost money. Initial estimates being carried out at this stage have indicated a cost of about \$2 million for the relocation of that plant and equipment and the reconnection and reservicing in the new facilities.

**Mr FORREST**—You are obviously looking to meet those costs out of other revenue sources, not this appropriation that we are considering now?

**Mr Moody**—The way our projects are funded is that our building costs are covered by our internal capital investment plan. Any loose furniture, fittings, that type of thing, the costs of relocation of equipment—particularly research equipment—are covered within the divisional cost budget. Perhaps Dr Sare can expand on that point.

**Dr Sare**—Yes, it is an expectation that the divisions themselves will fund those types of relocation costs from their own resources. That is something that we will be budgeting for in the year in which the relocation and actual move would take place.

**Mr FORREST**—It would be a fairly sizeable sum—that huge triaxial testing machine would weigh a few tonnes and that has to go to Western Australia. There would be sizeable sums involved.

**Mr Bosci**—The movement of any equipment from the Syndal site to Western Australia—which is the subject of another building application which was approved by the committee last year—will be covered by an arrangement that CSIRO has with the Western Australian government. They have actually made a specific allowance to us to help us offset those costs of moving major capability into Western Australia.

**Mr FORREST**—Is that something similar to what happened in Queensland at Pinjarra Hills, where the state government have provided assistance?

**Mr Bosci**—That is correct, it is on the same type of model.

**Mr FORREST**—The other thing that I usually go straight to is the master plan. You have said you have provided one and that this building is consistent with it. If that is the case, I am a bit confused about why we have to rip up so much concrete, so many driveways, so much bitumen, relocate drainage and probably water mains and so forth. The plans you have provided do not show where the existing infrastructure is but there is a sizeable amount that has to be relocated. If that is the case, how could this proposal fit a master plan? What I want to be confident about is that if we rip up roads, relocate fire services and all the other extensive infrastructure, in 30 years time another committee like this does not have to consider the same sort of thing. I get a bit cranky when I see good concrete being ripped up for no good reason, so how can it fit the master plan?

**Mr Moody**—It does fit a strategic plan which is included in the evidence. We have indicated that the area of development that is left to us on the Clayton site is to the east and this project represents the semifinal stage of development to the east. As you noted, in the

longer term there is a grassed area further to the east which we see as the last remaining area that we can develop on that site. We are mindful of that in the planning of our car parking, our roads and our services. There is another factor to this, though, that—

**Mr FORREST**—Obviously, this master plan is a new master plan, it is not the original one, otherwise we would not be ripping up so much roadwork.

**Mr Moody**—Granted, roads and services are a cost, but they also have limited life, as buildings do—in fact, they have a lesser life than the structural fabric of a building: a building would be designed for 40 years; some services in the ground can last 20 years. For example, you design a road pavement with a design life often of 20 years and you can have failures at the end of that 20 years which warrant reconstruction. So in terms of the design life of the services and the roads that we are removing, we are probably consistent with a program of refurbishment. Granted, the roads are in good condition, but they are a necessary means to providing an economic solution for the construction of the buildings.

**Mr FORREST**—It is probably the reason why there is nearly a million dollars worth of amounts in the cost estimate for external items. I am just expressing my disappointment. If you say those roads are deteriorating, you should try to drive on some of the roads out where I live. They are in excellent condition. I am probably just seeking some assurances that if we now have a master plan—and you have not said how old it is but it is probably more recent than the one that was prepared originally—we are not going to see that changed and in the future have to rip up more roads to make way for future development.

**Mr Moody**—The current plan is that we will retain the existing roads and make use of what will be the existing services at the completion of this project for any future development. They all have a design life and although it would certainly not be our intention, once again it may be that we do have to reconstruct those roads at some future date or re-lay the services. Just on the issue of the million dollars, there is not a million dollars in the cost of reconstructing roads to be removed, nor in the cost of services to be relocated; there is a considerable amount of excavation on the site to construct these buildings which is absorbed in this cost. There is landscaping, of course, which is included in that external component and, because we are extending the building, there is also the need to extend the services out to service that building. So the cost of relocating the services and the roads is not anything like the \$1 million, it is something considerably less.

**Mr FORREST**—I know you explained to us earlier what the intention is with the existing building on the site, but for the public record could you explain what is going to happen with the existing laboratory and how it is to be upgraded and why that has to happen?

**Mr Moody**—I will start with the reason why it has to happen. In its property management plan CSIRO has a philosophy of giving its buildings a half-life refurbishment every 20 years—that works on the design life of a building suitable for research purposes of 40 years. The Rivett Laboratory is 35 years old and it is well overdue on our current program of refurbishment. In fact, being of that age the servicing is now unsuitable for what we consider contemporary laboratory facilities.

There are other difficulties with the building that do not work as modern laboratories need to and, as best we can, we need to bring that up to an appropriate standard at what we see as the most economically efficient way. So the form of refurbishment that will be carried out to this building is to retain the basic structure but replace all the services in the areas of the building to be refurbished. We will replace ceilings, floors, finishes, repaint walls and refurbish the laboratory benching to fit in with our current laboratory configurations.

**Mr FORREST**—It is a bit hard to see from the scale of the drawings that are provided, but is opportunity being taken to create a more flexible future for laboratory size. I know that some of those laboratories that you showed us this morning are very small and cramped; does the new building plan build some flexibility into the future so that we can avoid that happening?

**Mr Moody**—It is absolutely critical in the design of our laboratories that we have built in flexibility and adaptability to meet what we would see as a changing research program. The building designed in the sixties, being the Rivett Laboratory, had that philosophy in mind in its own way, but laboratory requirements have changed, research programs change more rapidly, so the new building will be designed so that it can be adapted to the changing research programs. That means opening up the building, providing a servicing system that allows benches to be relocated, not allowing load bearing walls to be incorporated in the building, and having a service structure within which you can really fit any research facility.

**TEMPORARY CHAIR**—Gentlemen, can you quantify the approximate overhead costs associated with the current multiple site management that you have?

**Mr Moody**—We have undertaken an estimate of the cost of operating and maintaining the facilities from the viewpoint of the services costs, costs of utilities—that is electricity, gas, water and so on—building maintenance costs, electrical maintenance and so on. The estimate for the total of the current facilities that we are relocating is of the order of \$1.2 million. We have done a similar analysis on the new facilities basing it on what we think is projected energy usage and projected maintenance. The cost of providing those same services with maintenance or infrastructure services is about \$980,000. So overall there is a saving of \$200,000 per annum in servicing and building maintenance costs.

**TEMPORARY CHAIR**—You have done nothing on administration costs, the fact the campuses are separate and you are trying to deal with one another?

**Mr Moody**—That would be a separate cost because there would be savings in, say, having a shared library, a shared canteen facility—

**TEMPORARY CHAIR**—I understand that. I am just looking for a quantum. Was there someone down the back who had that information?

**Dr Sare**—Mr Chairman, we estimate the current saving in consolidating the administrative support infrastructure as \$900,000 per annum.

**TEMPORARY CHAIR**—So \$900,000 plus \$200,000, a total of \$1.1 million per annum. In relation to the current sites that you own, are there any issues such as soil contamination which have to be rectified before those sites can be sold?

**Mr Moody**—We have had contamination surveys carried out, as we always do before we sell sites. Based on the report that has been prepared, the Syndal site is free of contamination. On the Preston site, we understand that any contamination will not have any impact on what we see as its long-term use, which is an industrial site.

**TEMPORARY CHAIR**—You indicated that in your consultation process you consulted with the CPSU. Did you consult with any unions representing the CSIRO professional staff?

**Dr Sare**—The CPSU is the union which covers professional staff in CSIRO as well as technical staff.

**TEMPORARY CHAIR**—In relation to traffic management at the entrance to the site, I am not certain whether that is shown. Do you need provision for moving on and off the streetscape into your site? Do you need any traffic management devices because of the increased traffic load, traffic signals for example, heavy vehicle movements?

**Mr Moody**—There are a number of entries to the Clayton site and the drawings only show two of the entries, one being at gate 5 and the other gate 4 to the north of the existing Bastow buildings. We have had discussions with the Monash City Council on traffic management and parking and my understanding is that they have raised no concerns with what we are proposing as part of this development.

**TEMPORARY CHAIR**—Some of the staff that I spoke to at Preston this morning said to me that it is a long way to go, that it is out of the way from where they currently live, that it will take longer for them to get to work and that they were considering resigning. Have you looked at that issue and is that a problem for you?

**Dr Sare**—Yes, we have been very cognisant of that issue. We are very early in the piece. After the chief executive mooted that he wished to see the Preston site closed and people relocate we formed a joint management-staff relocation committee in order to initially provide a discussion forum so that people's concerns could be aired and then to come up with a package of conditions which would apply to staff who found the additional distance to travel to work and so on onerous.

CSIRO has a standard set of conditions that applies in such cases of intra-city transfers in so that if people's travel time increases by more than a certain amount or if the distance they have to travel to work increases by more than a certain amount then the organisation is able to offer them either some assistance with transport for a fixed period of time or it can offer them the costs of relocating their house. So we are very mindful of the concerns that staff have expressed and we are aware that the new workplace of some staff will end up being a long way from their home. I might add that we do have a number of staff already at Clayton who live in the northern suburbs of Melbourne and who already travel that distance so it is not an unreasonable distance for people to travel, but for those for whom it is a real problem we have a means of looking at it.

**TEMPORARY CHAIR**—So there is another potential cost there that has not been quantified because it would be very difficult to quantify at this time?

**Dr Sare**—That is correct, because we do not know how many people would ultimately wish to seek relocation assistance with their housing.

**TEMPORARY CHAIR**—In relation to the site that you are leaving, the sites that are leased or rented, is there any penalty for vacating the leased or rented sites that you are leaving? Does the lease run out, or what happens?

**Mr Moody**—There are two leased sites that we are vacating as a result of this exercise. The first site is at Carlton and the lease expires on that facility on 31 March 2001, with the option to extend it one year. That site is leased from Melbourne University and our understanding is that they have a need for that building from that period.

**TEMPORARY CHAIR**—There are no penalties there?

**Mr Moody**—No. The other site is Clayton, Blackburn Road, as we have described it, which is for the other group that is relocating to the site. That lease expires on 31 January 2000. We are leasing that building from Monash University and we anticipate that we can extend it, but it would be on a year to year basis.

**Mr FORREST**—Is that the biscuit factory?

**Mr Moody**—No, it is Bushells.

**Mr FORREST**—The biscuit factory is different; that is an owned site?

**Mr Moody**—That is an owned site. That is what we call the Clayton North site, commonly known as the Bushells site.

**TEMPORARY CHAIR**—In relation to the sites that you own and you are going to sell, have you assessed what you think you might realise for those sites?

**Mr Moody**—Yes, we have.

**TEMPORARY CHAIR**—In total, adding the two together.

**Mr Moody**—Adding the two together we anticipate \$3.75 million net.

**TEMPORARY CHAIR**—In your evidence on the benefits of co-location you say that you will optimise the use of costly major items of equipment. Could you give me examples of what those costly items of major equipment would be?

**Dr Sare**—Yes, things like scanning and transmission electron microscopes which groups at both Preston and Clayton need to have access to. With respect to things like mechanical testing equipment, again which both groups on the two different sites currently use, we

would be able to rationalise that equipment and not have to replace two when their end of useful life comes up. So they are typical examples.

**TEMPORARY CHAIR**—In point 29 you say that CSIRO collaborates with industry and ‘maintains close and mutually profitable relationships with universities’. What does ‘profitable’ mean? Does it mean in terms of the interaction or is it in terms of dollars? What is the context in which you have used the word ‘profitable’?

**Dr Sare**—It is used in both senses, but one is that CSIRO staff gain access to working with postgraduate students which gives us the capacity to do more underlying basic research using students in PhD programs. In a financial sense there is no profit per se in the way an accountant would look at it, but rather with universities we have been able to be very successful in securing cooperative research centres which have given us and the relevant university research providers access to new Commonwealth funds. So in that sense it has been revenue-generating for CSIRO.

**TEMPORARY CHAIR**—In relation to a number of these groups, you are going to base groups at Clayton but they seem to have outlying groups, like a small group in Brisbane or a small group in Adelaide, and somebody somewhere else. Have you looked at that in relation to how CSIRO operates? There is one group there that has members in Sydney and Canberra. Have you looked at all of that in relation to what you are trying to do in this project?

**Dr Sare**—Mr Chairman, I will respond from the perspective of the Division of Manufacturing Science and Technology and ask my colleagues to address the other two divisions. From Manufacturing Science and Technology’s perspective, the group in Adelaide is very self-contained. Their research, although complementary to that conducted in Melbourne, is quite separate. It is primarily welding related research, so we do not envisage any need for synergies to be derived from co-locating them, for example, in Melbourne.

The Brisbane based group of the Division of Manufacturing Science and Technology is very closely linked with CSIRO’s Division of Exploration and Mining at the Queensland Centre for Advanced Technologies. Their work on mining automation is very closely linked in with that other CSIRO division and a cooperative research centre. So, again, whilst there are clear synergies with what happens in Melbourne, they have quite a stand-alone focus on their activities with other groups in their immediate location. For the Sydney-Canberra group, that is probably referring to CSIRO Mathematical and Information Sciences. Dr Cameron could perhaps respond.

**TEMPORARY CHAIR**—Yes, it is Software Development and Engineering. I do not know the group—it is on page 9, the fifth paragraph down.

**Dr Cameron**—That group is a relatively new activity which has arisen out of two earlier activities in software engineering. The problem is sufficiently big that we want to put a reasonably large team to work on that distributed systems problem. The staff are currently in Canberra and Sydney. Our approach is to ensure that those groups interact strongly. The likelihood is that if you try to co-locate people all the time you tend to lose valuable staff, rather than gaining the benefits there. We would typically have, say, an overall activity in

the distributed system work with subgroups in Sydney and Canberra, working on different aspects of the overall problem.

**TEMPORARY CHAIR**—You also have a small outlying group at the High Performance Computing and Communications Centre in town; is that right?

**Dr Cameron**—Yes, that is a group that is working with the Bureau of Meteorology to retain a—

**TEMPORARY CHAIR**—It should not be out at Clayton?

**Dr Cameron**—No.

**TEMPORARY CHAIR**—In relation to the Division of Telecommunications and Industrial Physics, who do we have from here from that division?

**Dr Sare**—Mr Cook is the representative.

**TEMPORARY CHAIR**—You have the NML at Lindfield; is that right?

**Mr Cook**—Correct.

**TEMPORARY CHAIR**—Where is Lindfield?

**Mr Cook**—Lindfield is a northern Sydney suburb just south of the Pacific Highway near Chatswood. It is near the Killara golf course.

**TEMPORARY CHAIR**—I am too busy to play golf. The evidence says there is a group of nine staff located at Clayton; were they in your labs that we saw today?

**Mr Cook**—That is right—there are actually 10 of us at the moment.

**TEMPORARY CHAIR**—Why then are you here and not at Lindfield?

**Mr Cook**—It is partly taking advantage of a historical situation and partly because the work is here in Melbourne. We have a large number of clients who are involved in sophisticated manufacturing. They require precision measurement support, and the best way of providing it if you can is to have people with the knowledge and skills and facilities in the vicinity. It is much more expensive for us to, say, service clients in Brisbane than it is in Melbourne because of the cost of transport and travelling and so on.

**TEMPORARY CHAIR**—So your evidence is that it is important to obtain a cell here in Melbourne for the customers in Melbourne?

**Mr Cook**—Correct.



**TEMPORARY CHAIR**—you. Moving on to CMIS, it says that CMIS has an annual budget of \$33.7 million but it does not indicate the private contributions that might come into that area as the other sections did. Are there any private or industry—

**Dr Cameron**—I think at the present time we are getting about 27 per cent of our total annual budget from private sources.

**TEMPORARY CHAIR**—Is that 27 per cent of \$33.7 million?

**Dr Cameron**—Yes.

**TEMPORARY CHAIR**—Before I knew that I was going to be chairman today, I noticed a bit here about hydrofracturing. I spoke to the officer in charge of that area and I wrote down here, ‘Why is this not in Queensland?’, but I will not ask that now. Moving to the Clayton site with its own ‘special use’; in terms of the local authority what does ‘special use’ cover? Does it cover all the things that you want to do now and in the future in these new laboratories?

**Mr Moody**—Yes, it does. It is zoned in the same way as Monash University which is actually zoned as a technology precinct.

**TEMPORARY CHAIR**—In relation to the technical overview—which is point 91, page 16—it talks about ‘passive cooling and heating’. What is passive cooling and heating?

**Mr Hicks**—Passive cooling and heating is generally heating that is not provided by a mechanical plant or any other energy intensive means. It is shading, window glazing et cetera. Mr Macdonald could probably tell you a little bit more about that.

**TEMPORARY CHAIR**—No, I will not need that, I understand now. On the subject of car parking, the calculations I did were that about 190 extra staff were coming onto the site but there were only 140 car parking bays, including 20 reserved for visitors. There seems to be a discrepancy in the numbers. What I am sensitive about is being able to provide an appropriate amount of car parking on site, which often does not happen. Do you have a response to that?

**Mr Moody**—Certainly we do, Mr Chairman. We have undertaken a study of car parking across the total site. As I have said before to this committee, the philosophy on CSIRO sites is that we normally would provide car parking of the order of 80 to 85 per cent of the site population plus an allowance for visitors beyond that. The current ratio we have on site is a bit over 90 per cent. As a result of this development we are still fairly close to that 90 per cent of site population.

**TEMPORARY CHAIR**—And that has been adequate to date on the site—there has been no overload of car parking demand?

**Mr Moody**—Not to my knowledge.

**Mr FORREST**—They do not all bring a car each, surely?

**TEMPORARY CHAIR**—No, I am not saying that, but you have functions on site and whatever. On the air conditioning systems, is there any provision for partial air conditioning after hours? Do you understand what I am asking?

**Mr Hicks**—Yes, I understand what you mean, it is night setback of temperatures and so forth.

**TEMPORARY CHAIR**—Yes, or if staff are working in one section of the building only, can the air conditioning only run in that section of the building?

**Mr Hicks**—As far as possible air conditioning systems are zoned for the specific usages. Naturally, there is an economic level to which that can be carried out—it would not be done on a room by room basis—but it certainly would be done on occupation type so that, for instance, if the office accommodation was to be occupied for an extended period of time that could be operated whilst large scale laboratories could be disconnected.

**TEMPORARY CHAIR**—Point 138 of the evidence says:

A Building Management System (BMS) will be provided to monitor and control the mechanical services installations.

Will that also monitor the electrical services?

**Mr Hicks**—Building management systems generally monitor both the mechanical, operational and the electrical consumption of that plant. I am unsure of the answer to your question about electrical services, such as lighting and so forth, but I can get you an answer for that.

**TEMPORARY CHAIR**—It says there is going to be shielding provided where required for electrical switchboards and cables—I think it is really the cables. Where would shielding be required for cable routes through the building and why would that be needed?

**Mr Hicks**—A lot of research equipment is quite sensitive to electromagnetic radiation that can be involved with industrial frequency supplies. For instance, where you have machinery such as electron microscopes, which are particularly sensitive in this regard, where electrical cables, mains supplies and so forth run close to those areas, shielding will be adopted to ensure that the integrity of the microscopes is not affected.

**TEMPORARY CHAIR**—The last point I have for the time being is point 164 which I did not quite understand. It is about lift services and it says:

The new laboratories will include a lift of 3,000 kilograms lifting capacity and capable of holding 42 persons.

I was surprised at the size of a lift that would hold 42 people. An average person weighing 80 kilograms, multiplied by 42, is 3,360 kilograms, which is more than the lift capacity. Have we found something that is odd here or what is the explanation?

**Mr FORREST**—There are very few fat people.

**Mr Hicks**—The main criterion for the lift is in fact its stated weight carrying capacity which is the 3,000 kilograms. The lift is not actually a personnel lift per se, although it can be used for that if necessary. It is primarily for moving equipment and supplies from one level of the building to another.

**Mr FORREST**—I was very impressed with the electron beam lithography you showed us this morning. I am still carrying Dr Robert Lee's card here and looking at an image that can change dimensions and all sorts of things. I was anxious to hear, with respect to such a high potential revenue use machine, how much it relies on a reliable power source—a machine that takes up half of the power of the site—to keep air temperature and moisture at appropriate levels. I am hoping that appropriate measures have been put in place to ensure that that is not a problem vis-a-vis emergency power generation. Can you just lead us through what we put in place to protect that investment?

**Mr Hicks**—Emergency generation is generally provided only for essential services that have to be maintained to ensure that the safety of personnel is maintained should the site power supply be disconnected for any means. As such, ventilation systems and emergency lighting systems are generally the top priorities. If any specialist equipment would suffer long-term harm from being disconnected for some period of time, if it is required that that be maintained then that is connected to the essential power supply also. But it is not intended that building systems run in their entirety at these times of mains supply outage. The actual number of times that power has been removed from the Clayton site is remarkably small; it is a fairly reliable supply.

**Mr FORREST**—Mr Chairman, I wonder if I might go towards the future and the potential revenue earning capacity that some of our leading edge research has achieved. I notice the organisation's revenue budget is about \$720 million a year, of which \$475 million is appropriated from the parliament, and that the amount from industry and other sources is increasing and is currently up to about \$250 million per annum. Is there a potential for that to increase? I am wondering what business plan the CSIRO has in order to capture it so that taxpayers get a real benefit from the investment over the years that has gone into good science.

**Dr Sare**—The return which CSIRO gets certainly meets the target set by government—that is, that it should earn 30 per cent of its budgetary requirements from non-appropriation sources. In the recent sector planning process which CSIRO undertook in order to plan for the next triennium the targets set for different sectors of industry ranged up to 50 per cent for some sectors, particularly in the mining and resources type areas. The organisation does see a small increase in its external revenue earning performance over the next few years.

I think, however, what it regards as the primary benefit that the taxpayer derives is the creation of new businesses and the creation of new employment from those new businesses, the maintenance of existing businesses in the face of competition from imports and so on, through improvements to technology, through increasing the productivity of processes and so on. So the benefit that accrues to the taxpayer from the expenditure on CSIRO comes about much more largely through the wider benefits to CSIRO's client base than to CSIRO itself, but CSIRO itself is projecting a small increase in its external earnings over the next few years.

**Mr FORREST**—Is another way of saying that to say that there is a balance between just continuing to fund broad science with the hope that some of it is going to create an invention from which we will all benefit, as against a pure commercial approach? You have to find a balance?

**Dr Sare**—That is correct, there is a balance. If revenue earning were the sole *raison d'être* for CSIRO it could rapidly increase its external earnings by becoming essentially a consultant organisation doing very short-term work, but that would not be the reason for it to exist. Under the Science and Industry Research Act, CSIRO exists to do longer term research, strategic research for the benefit of industry and the community at large, so a balance has to be struck between that longer term work where the financial pay-off may be some years hence and short-term work which is much more guaranteed to generate revenues rapidly. A balance is continually performed by the CSIRO executive in order to ensure that its investment of appropriation funds into the different areas of activity is appropriate in order to get the right degree of moneys generated and the appropriate amount of strategic research conducted.

**Mr FORREST**—It just seems to me that the cold atom work that you showed us today is on the verge of moving from just being pure research to something that has commercial applicability, that it is timely now for the commercial sector to be perhaps throwing some more of its funding towards that—they get a substantial benefit if it works and it delivers for them greater efficiency—rather than the taxpayer entirely funding it all the way. That is the balance I am trying to see; even in my own mind I am trying to find that balance.

**Dr Sare**—In that particular instance the taxpayer is not, and has not been, funding it all the way because there have been significant industry funds derived from AMIRA, the Australian Minerals and Industry Research Association, which have provided the vehicle for a number of mining companies to pool their resources to support CSIRO work. It has had industry support now for about four years or so. In that particular example there is probably still a gap between the stage it has reached and the stage where we could reasonably expect industry to fully fund the development of the commercial black box that would then be placed in an aircraft to explore for mineral deposits. There is still some further fairly fundamental laboratory based work that needs to be carried out and we believe it appropriate that CSIRO, with industry support, continue to provide the resources and the funds to do that. When it has reached the stage where there is clearly a commercial product arising from the work then CSIRO would be working very hard to ensure that it derived a good return for the investment it will have made in past years in continuing that research.

**Mr FORREST**—I was also a bit surprised that somebody has been labouring away for six years; it seems an incredible amount of time. Is that the time that the research has to take or is that because there is a lack of funding and it has to fit into budgetary constraints? I think I would be very impatient if I was the young fellow inventing something fantastic.

**Dr Sare**—It is essentially the nature of the work itself. Throwing a lot more resources at it and getting more people on board would not necessarily have speeded it up very much at all. One comes across unknown, unobserved, unreported scientific phenomena as one is doing research of that type and one needs then to explore those things that one has uncovered as one is going through a program of work. In doing research—fairly basic

research—and heading into the unknown, one does not know the obstacles one is going to come up with and how long it is going to take to jump over those obstacles turn by turn.

If I return to another example you saw, that of the X-radiography work, that has now reached the stage where a spin-off company has been formed and we are looking very closely at specific applications of new forms of X-radiography. That has arisen from many, many years of patient, basic research done in the laboratory and funded by CSIRO alone, but it has now reached that stage of maturity where external funds are flowing in. So I think at any given stage of a basic research program you will find that some of it still has quite a way to go before we can expect industry moneys to flow in and others will have reached the stage where the work can become, or should become, essentially fully externally funded.

**Mr HOLLIS**—Mr Moody, regarding the new road system there, I would imagine that the buildings would have some large vehicles coming down—I think there is a loading dock provided. Is there anywhere for the large vehicles that come in there to manoeuvre?

**Mr Moody**—There is the ability for vehicles to reverse, depending on which area you are talking about. If you are talking about between the process bay and the new research wing, there is manoeuvring adjacent to the Rivett Laboratory. Between the new process bay and the existing Bastow building process technical bay there is an area where a vehicle can get in but it would have to reverse out to some extent before it could drive out in the conventional manner.

**Mr HOLLIS**—So it would have to be done by drivers with some skill. I guess CSIRO conduct regular fire drills?

**Dr Sare**—Yes, we do.

**Mr HOLLIS**—Have there been any major fires recently at Clayton, or any fires, major or minor?

**Dr Sare**—No, there have not.

**Mr Moody**—No major fires.

**Mr HOLLIS**—Was fire protection discussed with the local metropolitan fire brigades?

**Mr Moody**—Yes, discussions have been held with the fire brigade and at this stage they are satisfied with the work that we are doing in the development of this design.

**Mr HOLLIS**—Just two final questions if I may, Mr Chair. To go back to the confidential cost estimate—and I will not disclose figures, obviously—what are ‘statutory charges’? Are they stamp duties, government fees or what?

**Mr Moody**—That is an allowance that has been put in the estimate by our cost planner to cover charges for, I think, mainly hydraulic services connections and the like.

**Mr Hicks**—Most of the statutory charges are charges that are now levied by the corporatised or privatised utilities for alterations to supply, reconnections or new connections and, as Mr Moody said, hydraulics. Head work charges are the most prominent of those.

**Mr HOLLIS**—It was so low I thought it must have been government charges. My final question is—

**Mr FORREST**—Those charges have always applied to water boards; it is not because they change their status.

**Mr HOLLIS**—Over the last few years we have had a number of these hearings, for example down in North Ryde, Pinjarra Hills and Bentley. How have they come in on the cost thing? Have they been within the projected budget, are they over, realising that the Bentley one would not be completed yet, but how have Pinjarra Hills and Ryde come in?

**Mr Moody**—What I can tell you on Pinjarra Hills, for example, is that the last major contract on that was tendered about two months ago and we are on the verge of letting a contract. You will be pleased to know that that contract is being let within the overall project budget, so we are running within budget on the Pinjarra Hills project. I am living in trepidation on the Bentley project because tenders closed at 2 o'clock today. I may be able to advise you after this hearing how tenders came in on that project.

**TEMPORARY CHAIR**—A last question from Mr Forrest.

**Mr FORREST**—I remember in one other inquiry the gold plated taps, but paragraph 125 talks about stainless steel downpipes and it leapt off the page at me. Why would we want to have stainless steel downpipes?

**Mr Macdonald**—Stainless steel is a very durable material from a downpipe point of view. In our experience gutters and downpipes have a far better life if they are in stainless steel.

**Mr FORREST**—Really? What is wrong with galvanised iron; it works everywhere else?

**Mr Macdonald**—It is really a design life issue in terms of the durability. One can go for a lower quality and that has a different design life. The stainless steel is a very good product.

**Mr FORREST**—I told you, Mr Chairman: gold plated taps; that is unbelievable.

**TEMPORARY CHAIR**—As there are no further questions, I propose that the documents which have been circulated to members of the committee be incorporated in the transcript of evidence. Do members have any objections? There being no objection, it is so ordered.

*The documents read as follows—*

**TEMPORARY CHAIR**—Before closing, gentlemen, thank you very much for a very good submission. We appreciate the effort that you have put into it and we wish you well. I would like to thank my fellow committee members, Hansard, and particularly the secretariat, who work tirelessly behind the scenes.

Resolved (on motion by **Mr Hollis**):

That, pursuant to the power conferred by section 2(2) of the Parliamentary Papers Act 1908, this committee authorises publication of the evidence given before it at public hearing this day.

**Committee adjourned at 2.37 p.m.**

