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Reference: Commonwealth Scientific and Industrial Research Organisation Entomology Bioscience Laboratory at Black Mountain, Canberra, Australian Capital Territory

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**JOINT STATUTORY COMMITTEE ON
PUBLIC WORKS**

Friday, 17 June 2005

Members: Mrs Moylan (*Chair*), Mr Brendan O'Connor (*Deputy Chair*), Senators Ferguson, Forshaw and Troeth and Mr Forrest, Mr Jenkins, Mr Ripoll and Mr Wakelin

Members in attendance: Senator Troeth and Mr Forrest and Mr Jenkins

Terms of reference for the inquiry:

To inquire into and report on:

Commonwealth Scientific and Industrial Research Organisation Entomology Bioscience Laboratory at Black Mountain, Canberra, Australian Capital Territory.

WITNESSES

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MORTON, Dr Stephen, Group Executive, Sustainable Energy and Environment, Commonwealth Scientific and Industrial Research Organisation	1, 20
SWAYN, Mr Alastair Hall, Director, Daryl Jackson Alastair Swayn Pty Ltd	1, 20

Committee met at 10.48 am

DALY, Dr Joanne, Chief, Division of Entomology, Commonwealth Scientific and Industrial Research Organisation

MIKULIC, Mr Antony, Acting Manager, Capital Projects and Sustainable Environment, Corporate Property, Commonwealth Scientific and Industrial Research Organisation

MOODY, Mr Trevor Laurence, General Manager, Corporate Property, Commonwealth Scientific and Industrial Research Organisation

MORTON, Dr Stephen, Group Executive, Sustainable Energy and Environment, Commonwealth Scientific and Industrial Research Organisation

SWAYN, Mr Alastair Hall, Director, Daryl Jackson Alastair Swayn Pty Ltd

ACTING CHAIR (Mr Forrest)—I am pleased to declare open this public meeting into the proposed CSIRO Entomology Bioscience Laboratory at Black Mountain, Canberra, ACT, and welcome witnesses and members of the public present. This project was referred to the Public Works Committee on 11 May 2005 for consideration and report to the parliament. In accordance with subsection 17(3) of the Public Works Committee Act 1969:

- (3) 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.

Earlier this morning the committee received a confidential briefing from the CSIRO and inspected the site of the proposed works. The committee will now hear evidence from the Commonwealth Scientific and Industrial Research Organisation and, later, the National Capital Authority. I welcome members of the CSIRO. The committee has received a submission and two supplementary submissions from the CSIRO. These will be made available in the volume of submissions to the inquiry and also on the committee's web site. I invite witnesses from the CSIRO to make an opening statement, if they so wish, particularly if they propose any amendments to the submissions that have already been made to the committee.

Dr Morton—There are two minor amendments; would you like us to table them first?

ACTING CHAIR—Yes, and then speak to them if you wish.

Dr Morton—Can I read out the amendments to the statement of evidence for the record?

ACTING CHAIR—Yes.

Dr Morton—On page 8, paragraph 50, the second sentence is to be deleted and replaced with: ‘An analysis of the portfolio of environmental biotechnology R&D across the Environment and Natural Resources Group was carried out in 2004 as part of this divisional objective. As a result, the decision has been taken to centre such work in CSIRO Entomology and to move about 22 staff from other divisions to help build this capability in CSIRO Entomology.’

The second amendment is to page 12, paragraph 70. The opening paragraph is to be replaced with: ‘The proposed new CSIRO Entomology Bioscience Laboratory will comprise a new two storey building (Building 179) of approximately 2,313m² gross floor area (GFA) as well as associated refurbishment works to existing and adjoining Buildings, 101 and 135’, the subheading, ‘New Laboratory (Building 179), Ground Floor’, and then the words continue.

ACTING CHAIR—Those are all of the amendments?

Dr Morton—Yes.

ACTING CHAIR—I now invite you to make a brief opening statement before we proceed to questions.

Dr Morton—This proposal brought before the Parliamentary Standing Committee on Public Works is for the construction of a new bioscience laboratory and refurbishment of two existing buildings for CSIRO Entomology at CSIRO’s Black Mountain campus, ACT. 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 and industry priorities according to CSIRO’s strategic objectives and to approved programs. As the committee is aware, the CSIRO is progressively upgrading many old, substandard and inefficient scientific research buildings as funds become available, and is constructing new facilities as required in order to meet changing research directions and needs. The committee has in recent years examined proposals by CSIRO in Newcastle, St Lucia in Queensland, and at Bentley in Western Australia, as well as at Black Mountain. We are proud to say that on all of these occasions the committee has reported favourably on the proposals.

CSIRO Entomology was established in 1928. Its headquarters are located on the CSIRO Black Mountain campus within the 70-year-old heritage listed building 101 and other surrounding buildings. Although a number of refurbishments have been carried out on parts of these buildings over the years, the buildings cannot be adapted to meet current and evolving laboratory standards and are unsuitable for accommodation of CSIRO Entomology’s current and planned research needs and anticipated growth projections. A large and increasing part of CSIRO Entomology research is now dependent on modern, integrated biosciences, including biochemistry, molecular biology, proteomics and metabolomics to produce new control strategies and products for pest and weed management in agriculture, environmental bioremediation and monitoring, and industrial bio-processing. The division will continue to invest in these integrated biosciences well into the foreseeable future, being an integral part of its growth strategy attracting significant co-investment by its research partners.

Various options have been considered in developing the proposal, with due consideration to the heritage characteristics of building 101, its adaptability to meet evolving regulatory requirements and functional research needs, and to ensure minimal disruption to research activities during the construction phase. So the solution now proposed to this committee has been evaluated as optimal to meet these criteria. The proposed new 2,300 square metre bioscience laboratory building will comprise modern generic laboratories, laboratory support facilities, a workstation and staff break-out areas to meet current legislative and regulatory requirements for bio-containment research work.

Associated partial refurbishment of adjacent building 101 will provide for the conversion of existing laboratories to offices, seminar and meeting facilities, and a new staff canteen. Refurbishment works in the adjacent building 135 will provide additional compliant laboratory spaces. The new building will be linked to each of the refurbished buildings by enclosed walkways. The proposed new building will provide international standard accommodation to meet CSIRO Entomology research needs, accommodating up to 55 research staff. It will enable the integration of laboratories, support facilities and equipment in a secure PC2 certified area consistent with requirements imposed by the Office of the Gene Technology Regulator for bio-containment work.

A heritage management plan has been prepared for the proposal consistent with the requirements of the Environment Protection and Biodiversity Conservation Act—EPBC—and has been submitted to the Commonwealth Department of the Environment and Heritage for endorsement. CSIRO's Black Mountain campus also accommodates CSIRO Plant Industry, CSIRO Land and Water, and CSIRO Atmospheric Research as well as some corporate units. The 37-hectare site adjoins the Australian National Botanic Gardens as well as the Australian National University, enhancing opportunities for ongoing collaborative research with these organisations.

The design of the proposed new building provides a facility that will allow leading edge scientific research within a comfortable work environment, one which is conducive for interaction of all staff and their research visitors and collaborators. The proposed development aims to provide all of the facilities necessary for CSIRO Entomology to conduct leading edge scientific research. The design of the complex reflects CSIRO's aspirations to provide a public interface for clients and visitors to act as a catalyst and attracter for promotion of CSIRO's work and to provide a comfortable, efficient working environment that incorporates provision for medium and long-term flexibility and adaptability. The proposal will incorporate various initiatives to minimise the impact on the environment, including selection of materials of proven sustainable manufacture, together with various passive and active energy conservation measures. The estimated cost for the proposed facilities is \$14.5 million at May 2005 prices. Construction is planned to commence in early 2006, and is programmed for completion by late 2007.

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 the 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 to 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 completed facilities 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 our long-term objectives.

The new facility and the resultant overall CSIRO Entomology complex will provide a powerful statement about CSIRO's commitment to research and development in the fields of ecology, evolutionary biology and biochemistry. CSIRO is satisfied that the proposed development is the most appropriate, timely and cost-effective way to provide safer and efficient accommodation for the staff of CSIRO Entomology and to fulfil the division's and CSIRO's research and development needs. It therefore submits the proposal to the committee for examination and seeks its endorsement.

ACTING CHAIR—Are there any other contributions to be made by other witnesses?

Dr Morton—No, I think we would welcome questions.

Senator TROETH—I think now that we have visited the site we can all see the reason for a change in the present layout and a change in the present building. Did you consider any other options when this project was being looked at, and why has the preferred option been selected?

Dr Daly—We looked at a number of options, including refurbishing building 101, changing the corridors, moving the internal walls to open up the building. This was going to be, I believe, a very expensive option, so that was discounted. We also looked at other placements of the building. We certainly work very closely with the ANU. We have talked with them about working closer. We have a number of major projects with them, but we believe that we need to upgrade our own facilities on-site as a necessary part of being able to do the work we do. We did consider some other options, but I think it is really that we need to upgrade our current facilities there.

Senator TROETH—We can certainly understand that. With regard to the heritage nature of the building, which you outlined when we were out there, can you tell us which specific elements of the building's interior are deemed to be of heritage value.

Mr Mikulic—The interior part of the building, its foyer in particular, is noted in the conservation management plan, as are elements of the corridors retained in that flow-through of the spaces that are visible from the centre part of the building to the north and to the south. They were considered typical of the time and expressive of that particular building. This is noted in the conservation management plan and should be retained. Hence one of the decisions in going down this path was that we did not want to destroy the corridors where it would be required in trying to open up the building for an open-plan laboratory. So that has been retained. There are other certain elements in the facade, the main feature of the building. The parquetry floor is noted, as well as some of the timber work or the case work through the building. There are some noted examples of furniture that exists in the building, and that is to be retained and looked after for continuation of the building.

Senator TROETH—How will the proposed works impact on the heritage nature of the building, and how has that been taken into consideration?

Mr Mikulic—The proposed works are being driven very strongly by the heritage aspects of 101. Architecturally, it is a very strong building in its style, and we have alluded to the fact that that is one of the reasons why we wanted to minimise the impact of a new structure onto the old building. As Alastair pointed out, one way is to provide a different type of architecture to clearly delineate that of the heritage facades. The contemporary building design shows where the old and the new exist. Where it interfaces, we have opted for glazed connections, so again we minimise the impact. The whole intention of the project is to remove those buildings in the courtyards and the additions that have been made over the years to building 101, being the annexe to the north and the lecture theatre to the west. So, by removing them and refurbishing the facade, we are enhancing the exterior of the building.

Internally, the main public address for the building is enhanced. As we went through the building this morning, we went to the entry foyer; that is to be expanded in the new proposal. Therefore, the public areas will enjoy what has been noted in the heritage plan as an important aspect of the building. Thereby, that becomes a larger and a more active space, as exhibition, reception et cetera, so they are all to be enhanced. As I mentioned earlier, the corridors are obviously retained, and that is noted in the conservation management plan. By using the existing doorways we are not altering any of the additional timberwork. So the whole proposal is basically trying to minimise the changes that will occur in 101, thereby retaining the intention of the original design of the foyer, but obviously making it a workable environment for its function. It is a functional building after all, and part of the conservation management plan notes that, so any work proposed works in harmony with maintaining those ideals of the building.

Dr Daly—One of the things that is really pleasing to me in this design is that it gives us disabled access to the building. It has been an ongoing issue for us as a division, under occupational health and safety issues, to provide access for disabled people in a dignified way. The heritage listing of building 101 has made that difficult. I think this solution actually comes up with something that is very sympathetic to its heritage listing and provides very good disabled access.

Senator TROETH—Yes. I think you also mentioned when we were out there the number of volunteers that you have, some of whom are older and will find a refurbished building a lot easier to access, which is very good to see.

Dr Daly—Exactly.

Senator TROETH—In your submission you have reported that there has been a geotechnical survey of the proposed site and that the underlying rock strata comprises flanglomerate—is that correct?—in which the footings of the new building are to be based. You are also carrying out a detailed site specific geotechnical investigation. Has that been completed yet and, if so, what are the results?

Mr Moody—Some further investigation has been carried out, but we will be carrying out more detailed analysis—having now defined the building footprint—so we can investigate in the areas where the building will be founded in the natural soil to test the bearing capacity and make any modifications to the footing and foundation design of the building to accommodate those geotechnical characteristics.

Senator TROETH—Do you anticipate on your preliminary work that there will be any unforeseen difficulties or costs associated with the design?

Mr Moody—No. The soil profile that we determined from preliminary investigation is consistent with that found elsewhere on the site. It should not present any difficulties in terms of the type of footings that we need to accommodate in the building design, and as a result we are confident that the cost estimates for that work can be contained within the project budget.

Senator TROETH—Very good.

ACTING CHAIR—Just to finish off on that heritage question: the Department of the Environment and Heritage have a certain sway and say in some of these things. Can you produce evidence to the committee that they have been satisfied and your assertion that the heritage values are preserved?

Mr Moody—Certainly. We have had extensive consultation with the Department of the Environment and Heritage over a period of time in developing the design solution for this building. We have lodged, after much discussion through preliminary drafts and the like, a final conservation plan to the Department of the Environment and Heritage—a copy of which we are more than happy to provide to this committee.

ACTING CHAIR—Let us work through that process. So you have lodged, but you do not yet have a response?

Mr Moody—We have had responses to drafts over a period of time. What we are awaiting now is the final formal endorsement from the Department of the Environment and Heritage based on the final conservation plan that we have now lodged with them. We do not anticipate any difficulties because of the extensive consultation process and the drafts and redrafts that we have submitted to the department. From our understanding of the process, it is now just the formal approval that we are awaiting.

ACTING CHAIR—I think the committee would like to see at least some approval in principle that you are satisfying their expectations. Can you provide us with that?

Mr Moody—We certainly have correspondence between the two parties, and we can demonstrate to you through that correspondence that we have, I suppose, an endorsement of the principles. It is really just the formal approval that we are awaiting from the department, and we are more than happy to provide that to the committee.

ACTING CHAIR—We will rely on you for that.

Mr JENKINS—The project involves the demolition of a number of buildings and structures within the courtyard. Can you outline the nature of those buildings and structures and confirm that, included in the buildings to be removed, is building 102, with building 164 on top of it. I cannot remember the number of the smaller building but it is reddish-brown brick in colour and seems to be the most recent of the structures within the courtyard. What was the nature of the work that was done in each of the buildings?

Mr Moody—Dr Daly will have to tell us more about what is carried out within the buildings. In terms of those buildings, they age from 1929 to 1956—the most recent being 1956, and that was building 104 which has had some refurbishment carried out. They are all buildings of the age of 50 years and beyond. They are beyond what we consider economic life for a laboratory or a research facility. As a result, there is no point spending any more money on them for the type of research work that needs to be carried out in that facility.

Dr Daly—I cannot always remember the building numbers, but I will describe the functions of the buildings. The large building that was refurbished with a new roof currently is a PC2 laboratory, and that work will be relocated into the biosciences building. There are a set of two older buildings and one has a new artificial roof. It was the very old building that is a modified glasshouse. They are constant temperature facilities where work is done on insects and weeds. Those facilities will be relocated to the basement of the new building, I believe. There is also a very small building that is also classified as a PC2, and it is utilised for rearing insects that are then placed onto genetically modified cotton. That work can be relocated elsewhere.

Mr Moody—I might add that the buildings that have been earmarked for demolition have been written down to a zero value on our asset register.

Mr JENKINS—Is it likely that any hazardous materials will have to be removed as a result of the demolition of those buildings?

Mr Moody—Prior to any demolition work, a survey will be undertaken to determine that there are no contaminants in the building. They will be cleared from the building. I suppose the only hazardous material as such that will need to be removed will be the asbestos cement cladding for roofing materials, underlining of eaves and so on, and that work will be carried out in accordance with the requirements of Worksafe Australia.

Mr JENKINS—So the known removal of asbestos has been factored in?

Mr Moody—Yes.

Mr JENKINS—Is allowance made for any unknown within the contingency?

Mr Moody—Yes.

Mr JENKINS—We talk about laboratory workspaces: I am trying to get to the nature of a measurement of what you are providing by the number of people that can work there. Perhaps if I track back: how many people work at the Black Mountain site now? How many of those are clerical; how many of those are laboratory staff?

Dr Daly—Are we just talking about Entomology or the whole Black Mountain site?

Mr JENKINS—Sorry, yes, Entomology.

Dr Daly—These numbers are approximate, and they do change, but approximately 260 people are actually located in the Entomology buildings on-site, of which 190 are staff; the remainder being students, visitors, volunteers and honoraries. I do not have the number of administrative

staff versus research staff; I could obtain it for you. The number I have in my head is for the whole division, not just those on Black Mountain. Most of our administrative staff for the division are there, and it is about 30. We have approximately 25 workshop staff.

Someone has just provided me with the data. However, the number of staff is not broken down by administrative and research project staff. I could give you an approximate number out of that 190. I suspect it is about 45 to 50 research scientists, plus another 10 or 15 post-doctoral fellows. We would have 30 administrative services staff and 25 workshop staff, with the residual being the technical staff that support the research. So the bulk of the staff, I guess, would be research staff, either research scientists or research project staff.

Mr JENKINS—In the office space that will be provided in the refurbished building 101, how many workstations will be provided?

Dr Daly—In 101 or the new building?

Mr JENKINS—As to the refurbishment that results in office space, I take it there will be some for admin but it will mostly be for laboratory personnel, which they have progressively lost. Will you be attempting to give each individual a position? What will be created?

Dr Daly—I do not know the number, but I can say that generally the provision of office space and the amount of office space does depend on what they do. Research scientists generally have their own office as they need to work in a quiet, reflective space. Post-doctoral fellows and students tend to share offices. The administrative staff generally work in open-plan areas.

Mr Moody—One thing I might add is that we are proposing that the new laboratory will accommodate 55 research scientists. The offices supporting those research scientists will be located in the heritage building 101. The office space that will be occupied by those 55 people in offices is approximately 590 square metres of building 101. The statistic I am leading towards is that the area per person—which I think is leading to what you are seeking—for research personnel is approximately 50 square metres all-up; that is, office, support and research space.

Mr JENKINS—And the office component of those 55 is over 10 square metres?

Mr Moody—Yes, 590 square metres is being provided within building 101.

Mr JENKINS—So the 55 includes the 22 mentioned in the amendment to paragraph 50?

Dr Morton—Correct.

Mr Moody—My understanding is that some of those 22 people will be accommodated elsewhere within building 101. There are some generic laboratory spaces, and they will not all be accommodated within—

Mr JENKINS—In refurbished building 135, where there will still be laboratories, is it the same figure as you have for the new building 179?

Mr Moody—We can provide the floor area of building 135. I cannot provide the exact number of people within building 135. That space is being refurbished, to some extent, for their current needs, so the number will not change remarkably in building 135 over what is there currently.

Mr JENKINS—I want to be able to compare the breakdown that you gave for the costings of the new greenfields site, for the 55, as against the amount set aside for the refurbishment of the laboratories which, as I understand it, is mainly in building 135.

Mr Moody—No, that is not quite correct. As I said, the 55 people are really being accommodated within the new laboratory building, and their office accommodation will be in building 101. At the same time, we have other people on-site who are in building 135 now, and the intention is to refurbish that space to bring their laboratories up to contemporary standards. An exercise we go through in the design of our facilities is benchmarking against other facilities, and the area per person that we have determined for the new facility and support at 50 square metres per person is consistent with what we would expect in any of our other facilities. I cannot provide the direct measurement of the number of people within building 135. I can provide the area, but I do not have the number of people in that building. Based on my observations, I would have to say that would be consistent with the same area per person as we are providing within the new and refurbished facility.

Mr JENKINS—My interest is really with respect to cost. What is the expected final cost in providing the new building and catering for 55 compared to the refurbishment, based on the number of laboratory units or whatever we might call them? Is it similar or greater than in the new building?

Mr Moody—I believe that it is consistent with what we are providing in the new building in terms of standards of accommodation and areas per person provided for the research staff.

Mr JENKINS—If that is not the conclusion, then it would lead to the question: why not provide for those people in an expanded new facility?

Mr Moody—To some extent there will be some overlap between the two: the people who are currently working in building 135 over a period of time, in theory, could be working within the new building. That is why it is important that the quality and standard of accommodation be consistent in the new building compared with what we are trying to provide in the refurbished space. That is why there is a need to bring it all up to contemporary standards for PC2 laboratories.

Mr JENKINS—Can somebody just expand on a PC2 laboratory? Is there a level below that, and what is the level above it? That might help my understanding of it.

Mr Moody—Joanne can probably talk more about containment facilities but, as a guide, you may be familiar with the animal health facility at Geelong.

Mr JENKINS—Yes.

Mr Moody—That is classified at the ultimate level of a PC4 containment facility, and that is designed as a box within a box facility where there are rigid controls about how people can come and go and how they can operate in the facility. A PC2 laboratory is probably what is called the lower level of containment facility, and its features are often in the management practices carried out. People have to gown when they are working within the facility, they cannot take food and drink in there but, from an engineering viewpoint, it operates in a negative pressure regime. That means that air is sucked in, so nothing can be transmitted out from that zone. The differential air pressure is probably about 50 pascals. If it is greater than that, people will not be able to open the doors effectively. It is just enough to maintain that environment where whatever is being carried out within the facility is contained within that space and cannot be transmitted.

Dr Daly—There is a lower level of containment called PC1. We choose not to develop laboratories at that standard. We choose to have all our molecular biology done at PC2 level work. That way you can have all the work shared over the same equipment. All the equipment sits at PC2 level, and whatever level of containment is needed—either PC1, which is no containment, or PC2—the equipment can be shared. There are certain things like controlled movement of the staff. Staff must de-gown before they come out of the area. They cannot wear their lab coats out of the area. If they have been handling certain organisms, they must wash their hands. If they are going to carry material from one end of the building to the other into an area that is not PC2, it must be carried in a container box. So it is very low risk, low level containment, but it does control movement and provide a level of hygiene.

Mr JENKINS—On our tour I think we saw non-GMO sinks and GMO sinks. I saw an article from Health and Aged Care dealing with GMO stuff. What is required of the waste involved in washing up after that?

Mr Mikulic—PC2 requirements combine a number of elements, both in engineering or building and in management practices. GMO practices must be carried out in a PC2 facility. The wastes that are treated must all be autoclaved. On our site inspection we saw the large autoclave, and that was the smell that was emanating down the corridors. So all autoclaved wastes are discharged down the drains and they go through a separate waste treatment located on the site. That is a neutralising pit. It all complies with the requirements of the local authorities and we have trade waste licences to manage that. With the design of the building it is proposed that the existing drainage systems and management practices in place will basically continue.

Dr Daly—If I could add to that, the non-GMO sinks are for hand-washing only and the GMO sinks are for all other work we do—so, again, we do not have to worry about people sitting there wondering if this containment is PC1 or PC2. Everything is treated at PC2 level, irrespective of whether or not it needs it.

ACTING CHAIR—Referring back to the opportunity provided by this building for the CSIRO to showcase the latest in water and energy conservation, there is a Land and Water precinct on Black Mountain. Could you just run through some elements where you have tried to utilise solar resources, demonstrate maximum water efficiency and similar issues? I hope you have taken all those things into account.

Mr Mikulic—CSIRO has a very strong policy in terms of sustainable design development. It is brought on from the outset of the preliminary design output into the constructed building. So it

is all evaluated all the way through. Everything is tested and validated in terms of how it is working and its cost efficiency. Rainwater is all harvested from that building into rainwater tanks located in the undercroft area to the west of the building. That rainwater is used for toilet services and any irrigation requirements, and also through the mechanical system for pre-cooling. The water is sterilised and pressurised. The hot water is solar hot water, with gas-fired booster heaters. The use of electricity is minimised through selection and installation of appropriate and energy efficient appliances and light fittings. Also, the use of daylight is maximised. Light fittings might not be needed towards the perimeter, with the use of light sensors et cetera controlled by the building. All mechanical and large plant selected is the most energy efficient and appropriate for the project. Through the mixture of the hydraulic systems and electrical and mechanical, all items have been costed and life-cycled to provide the most appropriate sustainable outcome for the building.

ACTING CHAIR—From a solar point of view, it is probably difficult. You do not have ideal orientations and adjacent buildings. Is that part of the reason why there is more glazing planned for the project?

Mr Mikulic—Under the laboratory requirements, we have to exclude the intrusion of natural light or sunlight from the laboratory. That is one of the reasons the laboratory is located in the centre part of the building. Therefore, we put the offices to the perimeter and maximise the solar gain. Generally it is uncomfortable for workers to have direct sunlight shining on a desk, so a number of active and passive solar shadings will be used. We have glazing to the north so those offices can receive some nice sunlight. Also, there are some meeting rooms on that side. The glazing to the east of the building is shaded but it maximises the amenity of the courtyard and the views into the courtyard created between building 101 and the new building 179. It is controlled sun glazing through high performance glass to minimise loss and also maximise gain in winter. There is a slight amount of perimeter glazing high above the laboratory for some ambient light.

Mr Swayn—I might add that the building is reasonably well orientated so that there is a northern face, and above that are these solar panel collectors for the domestic hot water system. The orientation for the solar panels is pretty good.

Mr JENKINS—What rating does the building have?

Mr Mikulic—The laboratory building currently is not able to be rated. The ratings out there at the moment refer to office buildings.

ACTING CHAIR—In regard to water, I have read in the submission about the consideration of a water-chilled airconditioning system. Given that water is the new challenge, have you considered other airconditioning, such as air chilling? Why is water the best?

Mr Mikulic—The airconditioning is an air-cooled or air-chilled system through compressors. The water being used is only in some instances for pre-cooling of that air through evaporation and that is only if it is appropriate. It is not continual, and it is one of the alternatives that has been pursued. It is generally a closed system in terms of the water. It is air-cooled, so we are not using cooling towers which have larger quantities of water.

ACTING CHAIR—I think I also read about water treatment somewhere. I have forgotten the reference to that. Is the town water in some circumstances not of a sufficient quality?

Mr Mikulic—No. I think you may be referring to the water treatment that is on the waste side in terms of that pH dosing. Was that in the reference? Also, the rainwater is being sterilised.

Senator TROETH—Did you consult with the Australian Greenhouse Office, or did the planners consult with the AGO, on any of these elements?

Mr Moody—We have been constantly consulting with the Australian Greenhouse Office in the development of techniques to minimise or conserve energy in laboratory facilities. The Greenhouse Office are a bit like us in some respects: they are trying determine what is an appropriate energy target for laboratories and how can we minimise the consumption of energy. Laboratories are notorious consumers of energy because of the type of environmental conditions required to be maintained. Also, there are the difficulties of fluctuating energy demands because of the constantly changing research. We are consulting constantly with the Australian Greenhouse Office and are working together to determine a solution between CSIRO and the Greenhouse Office for appropriate targets for energy usage in laboratory facilities.

ACTING CHAIR—Getting back to my question: 10.6 at page 15, paragraph 82, refers to laboratory grade reverse osmosis water reticulation. That is what my question referred to.

Mr Mikulic—That is laboratory grade water that needs to be purified. That is used for experiments and instrumentation. So there is a central recirculated system that runs around the building that purifies water to much higher levels. That water is not for drinking, for instance, it is purely laboratory grade water for research purposes.

ACTING CHAIR—Could you run us through the approvals process, particularly from the planning point of view and in respect of regulation by the National Capital Authority? The committee is a little anxious that the process may hold up your project, and I am hoping that you can assure us that this process is already well under way. We note in the National Capital Authority's submission that notional in principle approval has been given. Knowing how long this process takes, could you run us through what has been done so far with the National Capital Authority and what you anticipate will happen in getting the final approval process completed?

Mr Moody—The CSIRO site at Acton is what is called national land within, I suppose, the designated area of the National Capital Plan and, as a result, we need to have what is called works approval from the National Capital Authority. We have been maintaining consultation with the National Capital Authority in the development of the design, and I think in February this year we provided sketch plans to the Capital Authority, similar to those in the evidence. They have endorsed in principle the design as it is going forward but, as we go through the process of design and documentation, it is at that point that we will have works approval for the project to proceed. I would like to think, through the consultation process that we have maintained with the National Capital Authority, that there should not be any difficulties in obtaining their endorsement for works approval so that the project can proceed to construction.

Mr Mikulic—If I may add to that, we had a presentation to the NCA board late last year and the project in detail was presented to that board. According to some of their comments that have

come back to us, it received a very warm welcome by them, and that will assist us with works approval later on. Obviously we cannot go for the works approval until we have completed the documentation, but the indication is that so far it has been well received.

ACTING CHAIR—It might be useful for the committee if you could provide us with some sort of time line chart of where you have programmed approvals and so forth so that we can be assured that this has been reasonable. Do you have that sort of information available to give to us?

Mr Moody—We can certainly provide a time frame. The time frame, of course, is very much dependent upon approval in parliament for this project to proceed following the examination of this committee. Our plans are that we would seek tenders later this year, subject to approval by parliament, with a view to construction starting early in 2006, and with staged completion by the end of 2007. Once we have the approval, we will proceed with further design development documentation ready to go to tender for the project to meet that overall construction program.

As to that program, the works will be carried out in stages. We will first build the new laboratory building after demolition of the existing facilities within that area. Once that is completed, we will then commence refurbishment of buildings 101 and 135, with the intention that we minimise disruption to the research activities being carried out in the existing facilities. By completing the new facility, we are able to move people from the areas that are being refurbished so that we can proceed. Obviously nothing is easy when you are trying to undertake construction on an active site, but we are confident that we can achieve a reasonable time frame with minimal disruption to research.

ACTING CHAIR—All of this is to completed by which month in 2006?

Mr Moody—We are anticipating late 2007, so that means construction starting in 2006. The reason it is such a lengthy construction program is the need for staging. Ideally we would complete construction, if we had a clean site, within probably 15 to 18 months at the very most.

Dr Morton—Mr Forrest, you requested further information about the time line. In what sort of format, and in what time frame would you require that?

ACTING CHAIR—It is usual that somebody makes an estimate to the Public Works Committee—and we will be doing our best not to hold you up at all—and submissions to the National Capital Authority. Approval takes place in one month, two months or weeks. I am sure you have done it. I am not asking for a detailed, critical program; it is just so that we can be aware if there are any constraints in the planning process. It sounds like it is well advanced, though.

Mr Swain—We would normally provide that information to CSIRO as part of our normal documentation process, so they are advised of what we as the architects are doing, and the works approval process from the National Capital Authority would be part of that. We anticipate that we would be planning to have all that cleared away by about the time we go to tender so that we have all the approvals in place for the tender process.

Mr JENKINS—With respect to barrier-free access, I actually think the submission understates the efforts that you have made. Besides the ramp as an entrance for the public from the front and the design of the walkways and the lifts and everything, what other measures are in this building that add to barrier-free access—for instance, new amenities ablutions, whether there is anything in the nature of workplace issues for barrier-free access to the laboratories, offices and the like?

Mr Mikulic—As you say, the barrier-free access is extremely important for the project and the operation of CSIRO facilities. Aside from the ramp that allows equitable access to the front entry to the building, the use of lifts allow free easy access vertically through the building. Of course, we are providing a number of accessible toilets and also hearing augmentation through the seminar facilities by providing hearing loops in certain areas, including reception areas. So we are addressing that side of the compliance issues. Through the office accommodation, areas that are identified as being accessed by a disabled occupant will have the necessary adjustments made, such as adjustable desks et cetera. Laboratories, by their nature, generally have wide circulation areas and a number of benches will be adjustable to allow for the person to be using that workstation. So, through use of lifts, through hearing, through toilet amenities, we have more than adequately covered the barrier-free access requirements throughout the existing building and through the new building.

Mr JENKINS—Will the lifts be taken out of the middle part of 101, in the existing building?

Mr Mikulic—The existing lift that is next to the staircase will be retained. It will be used just for goods or more or less like a dumb waiter.

Mr JENKINS—The new lift will have access to the basement?

Mr Mikulic—Yes.

Mr JENKINS—With respect to the consultation with staff associations, what unions other than CPSU have coverage and have been included?

Mr Moody—Essentially the CPSU. We have what is called a project control group that was formed very early in the concept design process. One of the members of that project control group is the CPSU representative. So we have had staff association representation throughout the development of design, and that consultation has obviously gone out to staff progressively during the development of design.

Mr JENKINS—Have the issues of the relocation of the Gungahlin 22 been covered by that committee?

Dr Daly—The answer is actually no. Those people are already moving in to our building and another building whose number I cannot remember. They would not have been included specifically as a separate group, because they would be built into just general consultation.

Mr JENKINS—The issues are being dealt with because of what is presently provided in the normal course of events?

Dr Daly—In a broader sense, yes.

Mr JENKINS—The nature of the bike lockers and things like that will remain the same but just be relocated?

Mr Mikulic—That is correct, undercover in the courtyard. I think we might be actually increasing the number of bikes, and it is all done in consultation with the staff to meet their requirements.

Mr JENKINS—So car parking or things like that for the actual increase in staff does not directly relate to the project because they are already relocating?

Dr Daly—Yes, and also we do have available car spaces for increased numbers of staff if that occurs, so that is not a problem.

Dr Morton—That is the car park to the south of the buildings, which has plenty of capacity.

ACTING CHAIR—Referring back to my planning questions and with respect to the obstacles in the way, at paragraph 67 on page 10 of the submission, it states that an application has been lodged with the Environment Minister through the EPBC Act. Being another obstacle in the way, with the huge number of people required to be involved, can you explain the nature of that application and any feedback you have about potential issues that might cause delay in approval?

Mr Mikulic—We have had a number of discussions with the Department of Environment and Heritage and the EPBC referral section on this project. We are still in consultation with them, and have supplied them with all the information they have requested. We are awaiting their decision. That information has been provided to them prior to this meeting.

Senator TROETH—What was the nature of the application?

Mr Mikulic—The application is whether the action is controlled or uncontrolled under the Environment Protection and Biodiversity Conservation Act 1999. We have put forward a proposal to the referrals section with our opinion that this proposal is an uncontrolled action under the terms of the EPBC Act. We are awaiting their decision in that regard.

ACTING CHAIR—Did the building have any formal heritage listing under the previous legislation?

Mr Moody—Building 101 is listed on the National Register. The heritage listing started in about 1997 when the CSIRO commissioned a heritage study to be carried out on the Black Mountain site. That identified, I think, about four buildings on the site that were of value. In particular, they said building 101 had substantial heritage value. Following that, the Australian Heritage Commission, as it existed then, entered building 101 in the Register of the National Estate in October 1999, which was the Commonwealth Heritage Register. There have been changes, of course, over that period of time, and on 1 January 2004 the Minister for Environment and Heritage entered building 101 into the new Commonwealth Heritage List, as of 22 June 2004. So it has gone through a process of assessment and is formally listed on the

Commonwealth Heritage List; and hence our need to maintain the integrity of that building for any work that we are undertaking, either on the building or adjacent to the building.

ACTING CHAIR—Are you anticipating any delays in that process?

Mr Moody—No.

ACTING CHAIR—I think we are fairly satisfied. Thank you for the moment. You may be recalled after we have heard from other witnesses, but I thank you for your attendance and ask you to stay. We will now hear from the National Capital Authority.

[11.48 am]

BROUGHTON, Ms Natalie, Senior Town Planner, National Capital Authority

HUDA, Mr Shamsul, Principal Planner, National Capital Authority

ACTING CHAIR—Welcome. The committee has received a submission from the National Capital Authority. The submission will be made available in a volume of submissions for the inquiry and is also available on the committee's web site. Does the National Capital Authority wish to propose amendments to the submission it has already made to the committee?

Mr Huda—No.

ACTING CHAIR—I now invite either of you to make a brief opening statement and then we will proceed to questions.

Mr Huda—The National Capital Authority, which was previously known as the National Capital Planning Authority, was established in 1989 as part of the introduction of self-government in the ACT with a view to securing the Federal government's continuing interest in the planning and development of Canberra as Australia's national capital. The function of the National Capital Authority is set out in the Australian Capital Territory (Planning and Land Management) Act 1988. One of the key functions of the authority is to prepare and administer the National Capital Plan. The object of the plan is to ensure that Canberra and the territory are planned and developed in accordance with national significance.

Under the act, the authority can choose to define areas called 'designated areas' that are identified as having special characteristics of the national capital. There is a map in the National Capital Plan that sets out the designated areas and the site for the proposed development is in a designated area. Section 11(2) of the act requires all Commonwealth agencies, the Commonwealth or a Commonwealth authority, the territory or a territory authority, to do no act that is inconsistent with the provisions of the National Capital Plan. The act also requires, under section 12 (1)(b), that any works in designated areas should be approved in writing by the National Capital Authority prior to being undertaken.

The authority was first approached about the particular site, I think in June 2004, when a heritage consultant was engaged to first do a heritage assessment for the outbuildings, and also the existing heritage listed, building 101, which is the Entomology building. We were consulted by the consultant and we provided some input and then later, when the design was developed, based on the recommendations set down in September 2004, we provided some initial comments. Finally, the sketch plans were submitted in February 2005 and we have thoroughly considered the sketch plan proposal against the policies of the National Capital Plan and, based on our initial assessment, we have basically agreed to support it in principle. Details of the proposal would have to be lodged with a formal application that has not yet been lodged, but I expect it to be lodged in the near future. We will then consider the details before making a decision on granting works approval as required under the act.

ACTING CHAIR—Could you just explain the process? Obviously some notional application has been made, and you have given approval in principle. You will need to explain what that means. Further, what is required to satisfy the authority for approval?

Mr Huda—In terms of assessing proposals in designated areas, we tend to take it in two steps. Before a formal application is lodged, we ask the consultants or the project architects to submit sketch plans so we can look at it against the policies. If we think that they can be approved subject to certain details to be submitted later that are not yet available but which would be developed over time, and if all design issues are resolved then, we go back and give support in principle. Following that, an application can be lodged and we look at some of the detailed aspects of the proposal. If we are satisfied that they comply with the provisions of the National Capital Plan, we grant works approval. So it is more like a two-step process; the first step has been cleared, and if there are issues arising from the first process, we would definitely highlight that. Except for minor details that we have not received at this point in time, the proposal as it looks is fine and is able to be approved.

ACTING CHAIR—So, there is no sort of immediate indication on the radar that cause you any concern?

Mr Huda—No. The development proposal is going through certain processes. One is a process under the Environment Protection and Biodiversity Conservation Act, which would look at the environmental aspects of the particular proposal, including any likely impact on the heritage values of the place. So we would have to wait to see the outcome of that particular decision, particularly in terms of heritage more than anything else. That will certainly help us in making the decision on the application. That is one aspect of it. In terms of the design and siting aspects, the siting is fine, the design is fine; there might be one minor design consideration regarding the flues about which we can have some discussions with the architects in trying to determine if the height of the flues can be reduced a bit. Those are standard discussions that we have with the project architect. They are nothing of a major kind. There is nothing to suggest that the proposal is not capable of approval as such.

ACTING CHAIR—So there is no way that you would make any approval without the EPBC tick-off?

Mr Huda—The EPBC tick-off is under separate legislation from ours. Our consideration would have to be based on the policies of the National Capital Plan, and there is an environmental and heritage section in the policies which provides that the authority needs to give due protection to a place that is on the Register of the National Estate. So, in a sense, general heritage and environmental consideration is part of any development proposal, but we would wait to see the decision of the Department of Environment and Heritage on the detailed aspects of the proposal in that regard. We would take that on board, but, at the moment, as I understand it, the submission made by CSIRO is on the basis of a conclusion that it is not a controlled action. I understand that the department is about a week away from making that decision, so once we receive that decision, that will help us in deciding our position.

Mr JENKINS—As to the height of the flues, there is no problem with the height of the plant room?

Mr Huda—I think the plant room height works out all right. One of the key considerations in our assessment of the building height was the parapet height of building 101, which is the heritage listed building, as you view it in from Clunies Ross Street. I think the architects have done a pretty good job in trying to keep the height of the building, which includes the plant room, such that the building or the plant room cannot be seen from Clunies Ross Street in any significant way. The only design consideration on our part is to see whether we can negotiate further the height of the flue. We would probably ask the architects to consider it in more detail and see whether the height of the flue can be reduced, but that all depends on a number of factors, such as whether it meets the technical requirements and a few other things. It would be a matter of discussion with the architects. Other than that, the building looks quite good.

Mr JENKINS—It is good to get a planner's view of the architecture.

ACTING CHAIR—It is exactly the same height as the top of the main administrative entrance building. As there are no further questions, I thank you very much for appearing today. I was delighted to hear you mention something about the EPBC being only about a week away. We will not hold you to that, but that gives us some confidence.

Mr Huda—Thank you.

[11.58 am]

DALY, Dr Joanne, Chief, Division of Entomology, Commonwealth Scientific and Industrial Research Organisation

MIKULIC, Mr Antony, Acting Manager, Capital Projects and Sustainable Environment, Corporate Property, Commonwealth Scientific and Industrial Research Organisation

MOODY, Mr Trevor Laurence, General Manager, Corporate Property, Commonwealth Scientific and Industrial Research Organisation

MORTON, Dr Stephen, Group Executive, Sustainable Energy and Environment, Commonwealth Scientific and Industrial Research Organisation

SWAYN, Mr Alastair Hall, Director, Daryl Jackson Alastair Swayn Pty Ltd

ACTING CHAIR—In recalling you, I remind you that you are still under oath. I invite you to make any additional comments before members of the committee ask further questions. Do you want that opportunity?

Dr Morton—I do not believe it is necessary. We appreciate the support of our colleagues from the NCA.

Mr JENKINS—I have only one question. Anyone that may have reviewed public hearings of different committees would know that sometimes I give architects a hard time, and I am willing to give the architects equal time about the matter of the flue. I notice that, on the lower diagram, the flues are not present in the representation of the building, which adds just a little bit to the suspicion. I was more reassured by the answer about the plant room, because I now understand that that is the height of the central building. In the functioning of the flues, there is probably a necessity to have them at some height above the structure. Is there really much flexibility? I do not think this project will go down on the flues, but I think it should be placed on the record.

Mr Swayn—We have completed a planning study on the air flows from the flues to get their optimum flow so that it does not add contamination to other parts of the building. We believe that the flues, as shown on the drawings, are optimum. I am happy to talk with the National Capital Authority again about them and show them the technical information, but they are at the optimum level for their function.

Mr JENKINS—When trying to think about any equivalent laboratories that I know anything about, there is one in my electorate at RMIT Bundoora campus where the flues are the architectural feature of the building.

ACTING CHAIR—I am reminded of the Therapeutic Goods Administration's laboratory out at Narrabundah. It looks like a porcupine. Is there no opportunity to unite and have one single flue? Has that been considered?

Mr Swayn—I believe it has been. There are individual fans and ducts and fume cupboards on the ends of them, so they are doing specific jobs. To gang them together would not be as efficient.

Mr Moody—There are specific requirements, too, under laboratory codes about what is required in terms of the provision of flues. For example, in the US they do manifold flues into a single unit. In Australia that is not the accepted practice for exhausts from laboratories, from fume cupboard exhaust. So we do need to provide flues from such fume exhausts and, as Alastair Swayn indicated, studies have been carried out to minimise that height, consistent with good practice, to ensure there is no contamination in terms of locations adjacent to air intakes and to ensure that any exhaust fumes are transmitted to the atmosphere. There are techniques, such as increasing the velocity of fans and so on, to get the exhaust fumes further into the atmosphere, and we can apply all sorts of techniques to improve at least the aesthetic appearance of the flues to meet the National Capital Authority's requirements. But, as Mr Jenkins indicated, there are some laboratories around the country where the exhaust flues have become an architectural element, and the Therapeutic Goods Administration laboratory is one such laboratory where they were seen at the time as being a significant feature of the architectural design.

ACTING CHAIR—Being sort of desktop architects, when you look at the west elevation, they are not as obtrusive as they are from the south elevation, and that is because of the facade around the plant on the top of that building. Has an opportunity been taken to explore that, or is the location of these flues dominated by the laboratories that are underneath them? Again, we would probably need to consider the need for manifolds, but that is just an armchair observation I make. Any comment on that?

Mr Moody—As I said, there are minimum requirements that must be achieved, and we always set out to get exhaust air as directly into the atmosphere as we can, rather than having, say, horizontal or near horizontal ducting through the laboratory so it can go out at a different point. These are the optimal locations in terms of efficiency and so on, but, as I say, there are techniques we can adopt to minimise the impact or the appearance of those flues. We have presented what we see as the most efficient design, and obviously there are compromises we need to achieve.

ACTING CHAIR—Like Mr Jenkins says, it is not going to be the downfall of the project, but thank you for indulging us. I would like to thank the witnesses who have appeared before the committee today, and all those people who have assisted during our inspections and private briefing earlier this morning.

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

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

Committee adjourned at 12.05 pm