

Issues and Conclusions

Future Requirement

- 3.1 The existing Waterford Minerals Laboratory complex, comprising the Becher and Koch buildings, was designed in the 1990s to accommodate 65 staff and students. Full capacity was reached in 2002 and expansion to the current population of 70 staff and 10 students has necessitated the use of demountable buildings to accommodate staff, students and support functions.¹ The proposed extension would provide accommodation for an additional 30 staff, 15 students, and 15 collaborator personnel, bringing the total occupancy to 130.² The main submission from the CSIRO reported that the extended Waterford facilities would allow for future expansion, which would:

... involve extension of the north and south wings to the east with the added potential of extending the northern and southern wing to the west.³

- 3.2 In view of this statement, the Committee enquired when CSIRO expected there to be a requirement for future and expansion and, if this requirement were already known, whether it would be more cost-effective in the long-

1 Appendix C, Submission No. 1., paragraphs 15 - 16

2 *ibid*, paragraphs 5 and 136

3 *ibid*, paragraphs 65 and 91

term to enlarge the scope of the current extension proposal. Further, given the rapid growth of the Waterford facility over the past decade, the Committee wished to know how long the proposed extension works would comfortably accommodate the anticipated staff and student population.

- 3.3 CSIRO responded that, whilst future growth would be dependent upon co-investment from industry, it anticipated that the proposed extension works would meet requirements for the next decade. CSIRO explained that, as research programs can fluctuate over time, it would be unwise to plan for more than ten years ahead or to construct buildings that would be empty for a considerable period. It was the CSIRO's opinion that the current proposal represents the optimum deployment of capital and resources.⁴

Collaborative Master Planning

- 3.4 Given the close connection between CSIRO, the CUT and the Chemistry Centre of WA (CCWA), the Committee was concerned to ensure that the CSIRO's master planning process had given due consideration to the future requirements of its collaborative partners. CSIRO responded that the Waterford site master plan had been developed to allow growth to the east of the Koch and Becher buildings and to the west of the CUT School of Applied Chemistry; in addition to which, the CUT has land available to the north and south. It is anticipated that the physical connection between the organisations will be strengthened by the development of a covered link-way and large paved area between the CSIRO and CUT facilities.⁵

Site Considerations

Land Ownership

- 3.5 Considering the Commonwealth's considerable investment in the Waterford facility, the Committee requested that CSIRO clarify the land tenure arrangements for the site. CSIRO responded that it had entered into a 15-year lease on the Koch building in 1994, with an option for two 15-year extensions beyond the current expiry date in 2009. CSIRO added that negotiations are underway with the WA Government to convert the

4 Appendix D, Official Transcript of Evidence, pages 4 - 5

5 *ibid*, page 12

leasehold arrangements. For commercial-in-confidence reasons, further information on this matter was provided to the satisfaction of the Committee subsequent to the hearing.⁶

Geotechnical Considerations

- 3.6 The CSIRO submitted that the ground beneath the surface of the Waterford site is expected to comprise sand of varying degrees of compaction and silt, in which case no specialist foundation or road construction treatment would be required.⁷ The Committee asked CSIRO upon which studies this conclusion had been based and was told that boreholes dug at the site had revealed medium to dense-fill sand with a cemented sand layer at a depth of 1.8 metres. CSIRO confirmed that, as the building would be founded in dense sand, no special footings or foundations would be required.⁸

Flooding

- 3.7 Noting a reference in CSIRO's written statement of evidence to the
...development of an overland flood path to the eastern end of the site for surface stormwater to mitigate *[sic]* against building flooding,⁹

the Committee wished to know whether flooding was common at Waterford and what flood mitigation measures would be incorporated into the works.

- 3.8 CSIRO explained that the original development at the site had provided for significant overland flow through the development of stormwater settlement areas. It is further anticipated that Brand Drive and the newly developed roads will also serve as drainage paths, while the buildings will be elevated to between 800 centimetres and one metre above the low point of the site. A witness for CSIRO added that, while heavy downpours were not uncommon, the local sandy soil allowed the water to drain away.¹⁰

6 Appendix D, Official Transcript of Evidence, page 13

7 Appendix C, Submission No. 1, paragraph 69

8 Appendix D, Official Transcript of Evidence, page 10

9 Appendix C, Submission No. 1, paragraph 103

10 Appendix D, Official Transcript of Evidence, pages 8 - 9

Applications and Approvals

- 3.9 According to its main submission, the CSIRO has lodged a formal application under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) with the Commonwealth Department of Environment and Heritage (DEH) and, in accordance with State Government requirements, has submitted its proposal for development approval by the WA Planning Commission, and for comment by the Town of Victoria Park.¹¹ The Committee sought to ascertain whether these formal approval requirements could potentially delay the proposed works or incur additional costs. The CSIRO stated that, since preparing its submission for the Committee, it had received notice from the DEH to the effect that the proposed works do not constitute a controlled action under the EPBC Act and had received the endorsement of the Town of Victoria Park. At the time of the public hearing, no formal approval had been received from the WA Planning Commission, but CSIRO did not anticipate that there would be any difficulties with this process.¹²

Scope of Works

Design Concept

- 3.10 In its written evidence, the CSIRO stated that:

New building additions and alterations to the Koch Buildings will merge with the existing building form and fabric to create a cohesive architectural image.¹³

The Committee was interested to know how this would be achieved.

- 3.11 The CSIRO's architect explained that the extensions to the Koch and Becher buildings would comprise the same construction and cladding materials as the existing buildings, rendering the new, curvilinear southern wing of the Koch Building compatible with the rectilinear form of the parent structure.¹⁴

11 Appendix C, Submission No. 1, paragraphs 74 and 82

12 Appendix D, Official Transcript of Evidence, page 15

13 Appendix C, Submission No. 1, paragraph 87

14 Appendix D, Official Transcript of Evidence, pages 10 -11

Air-conditioning and Ventilation

- 3.12 As part of the extension project, CSIRO proposes to replace the current air-conditioning cooling tower, to upgrade the chiller and to provide supplementary central gas fired heating hot water plant for the air conditioning systems.¹⁵
- 3.13 The Committee queried the purpose of the gas fired heating hot water plant and sought to ensure that the air-conditioning system would incorporate the necessary measures to prevent the growth of *Legionella* bacillus. CSIRO explained that the gas fired heating hot water plant provides the heating component of the air-conditioning system. In respect of *Legionella*, CSIRO acknowledged that this had been identified as a risk and that a rigid maintenance regime had therefore been adopted.¹⁶
- 3.14 CSIRO's submission identified the need for make-up air systems to satisfy room pressure requirements and to work in conjunction with fume cupboards and exhaust systems, particularly in the laboratory areas of the facility.¹⁷ At the Committee's request, CSIRO explained that the fume cupboards and exhaust fans serve to extract air from the laboratories and discharge it into the atmosphere, thus creating a pressure differential between rooms. This system is intended to prevent fumes migrating from laboratories into other areas of the building.¹⁸

Ecologically Sustainable Development (ESD)

Consultation with the Australian Greenhouse Office (AGO)

- 3.15 The CSIRO intends that the proposed works should incorporate a range of ESD principles and energy conservation measures.¹⁹ The Committee noted, however, that the list of Commonwealth agencies consulted by the CSIRO²⁰ did not include the AGO, which is the key Commonwealth agency for the management of Greenhouse and energy conservation matters. At the public hearing, the CSIRO explained that it is developing energy systems in consultation with the AGO, and is assisting the office in

15 Appendix C, Submission No. 1, paragraph 100

16 Appendix D, Official Transcript of Evidence, page 11

17 Appendix C, Submission No. 1, paragraph 100

18 Appendix D, Official Transcript of Evidence, pages 11 - 12

19 Appendix C, Submission No. 1, paragraphs 127 - 130

20 *ibid*, paragraph 75

the development of new energy use guidelines for laboratories across Australia.²¹ Based upon this evidence, the Committee was satisfied that any potential problems relating to energy management would be identified and addressed.

Water Use

- 3.16 CSIRO's main submission listed a range of measures proposed to minimise water use at the Waterford site, including:
- installation of water saving devices in hydraulic fixtures and fittings;
 - harvesting and collection of rainwater;²² and
 - watering of landscaped areas using a zoned and time-controlled reticulation system.²³

At the public hearing the Committee asked CSIRO to elaborate on proposed water-saving measures, particularly in respect of landscaping.

- 3.17 In response, CSIRO described its intention to utilise indigenous, xeric plant species and to employ water retention methods such as mulching. Measures to reduce water consumption within the building would include use of dual-flush toilets and waterless urinals, and recycling of rainwater for toilet flushing.²⁴

Disposal of Hazardous Waste

- 3.18 The Committee wished to know whether the work undertaken at the Waterford facility involved the use of any chemicals that may present a public health risk if discharged from the premises. CSIRO advised that processes involving chemicals that may produce discharges or fumes are generally undertaken in closed chambers as dictated by occupational health and safety (OH&S) and environmental regulations. No hazardous materials would be released into the environment, as potentially harmful materials are treated using a reagent, which is then disposed of using an approved method. CSIRO added that it currently does not have any reagents on-site and, given the nature of the research undertaken at

21 Appendix D, Official Transcript of Evidence, page 12

22 Appendix C, Submission No. 1, paragraph 103

23 *ibid*, paragraph 112

24 Appendix D, Official Transcript of Evidence, page 17

Waterford, did not anticipate that hazardous reagents would be required.²⁵

Consultation

Organisations and Authorities

- 3.19 According to its written submission, the CSIRO contacted, or consulted with, a wide range of Commonwealth, State and local government departments, other organisations and neighbouring residents during the scoping of the extension proposal.²⁶ At the public hearing, the Committee inquired what form the consultation had taken. CSIRO replied that initial contact was made through a letter advising agencies of the project and inviting them to nominate a contact person should they wish to be involved. The letter elicited responses from CUT, Murdoch University, the WA Department of Environment and Science and the Department of Immigration and Multicultural and Indigenous Affairs. The CSIRO also undertook further consultation with its collaborators in the Cooperative Research Centres. CSIRO confirmed that all responses had been very positive.²⁷
- 3.20 CSIRO's assertion that the proposed work had been well-received by industry peers was borne out by evidence supplied by the CUT, the WA Department of Industry and Resources (DOIR), the CCWA and the AJ Parker Cooperative Research Centre for Hydrometallurgy (Parker Centre), all of which were extremely supportive of the project.²⁸

Local Residents

- 3.21 In respect of community consultation, CSIRO reported that it had undertaken a letter-box drop and had invited local residents to attend an information session about the proposed work, but this had not generated a great deal of interest.²⁹

25 Appendix D, Official Transcript of Evidence, page 14

26 Appendix C, Submission No. 1, paragraph 75

27 Appendix D, Official Transcript of Evidence, pages 5 - 6

28 See *Volume of Submissions* for the inquiry, Submissions 2, 3, 6 and 7

29 Appendix D, Official Transcript of Evidence, page 6

Staff

- 3.22 CSIRO submitted that it has conducted “information and consultation sessions” with staff of the Minerals Division and the CSIRO Division of the Community and Public Sector Union.³⁰ The Committee was curious to know the general staff attitude towards the proposal. A witness for CSIRO replied that employees were “eagerly awaiting” the development, and that both the staff and union had been very supportive.³¹

Amenity for Staff

Work Space

- 3.23 In respect of improving conditions for staff, the Committee wished to know how much work space would be provided for each employee, and whether this would represent an increase in the amount currently available. CSIRO explained that the new office accommodation would comprise a mix of enclosed offices measuring approximately 11 to 12 square metres in size, and open-plan workstations of approximately seven square metres. The witness stated that CSIRO aimed to improve upon the current accommodation standards, which were “pretty minimalist”.³²

Childcare

- 3.24 The CSIRO confirmed that employees had raised the issue of childcare during consultation, and that while there was no intention to provide a facility at the Minerals Laboratory itself, places would be made available at the expanded childcare facility at the adjacent CUT campus. CSIRO stated that employees were content with this arrangement.³³

Parking

- 3.25 CSIRO plans to provide supplementary visitor and staff parking adjacent to the main entrance of the extended Waterford facility, while retaining current staff parking.³⁴ The Committee queried how the anticipated

30 Appendix C, Submission No. 1, paragraphs 75 and 76

31 Appendix D, Official Transcript of Evidence, page 7

32 *ibid*, page 7

33 *ibid*, page 8

34 Appendix C, Submission No. 1, paragraphs 116 - 117

growth in staffing levels would affect the availability of parking. CSIRO responded that it had a policy of providing on-site parking for 80 per cent of staff and that the proposed 110 bays would satisfy this requirement.³⁵

Occupational Health and Safety and Access Equity

- 3.26 The Committee requested confirmation from the CSIRO that the proposed building extensions would be fully compliant with all relevant requirements in respect of OH&S, fire safety and access equity. CSIRO replied that the extension to the Koch Building would include two additional fire escapes, while the Becher Building already meets all emergency evacuation requirements. In terms of provisions for persons with a disability, CSIRO assured the Committee that all necessary access equity measures, including appropriate door widths, ablutions and lifts, would be incorporated.³⁶

Traffic Management

- 3.27 CSIRO reported that, as of early 2006, the Waterford site will be accessed by means of a single new road off Townsing Drive, which will be developed by CUT. The existing Brand Drive access route to the west of the site will be removed upon completion of the new road.³⁷ The Committee wished to know what impact this proposal would have on local traffic and whether a traffic management study had been completed. CSIRO replied that a detailed traffic study had been undertaken and that it was expected that local traffic would be significantly reduced due to the construction of a new southern entrance to the CUT.³⁸

Project Schedule

- 3.28 Noting that CSIRO hopes to commence the extension works in 2006, with a view to completion by 2007, the Committee sought confirmation that this

35 Appendix D, Official Transcript of Evidence, page 17

36 *ibid*, page 16

37 Appendix C, Submission No. 1, paragraph 114

38 Appendix D, Official Transcript of Evidence, page 9

time-frame would be achievable. CSIRO stated that, should parliamentary approval be granted for the project in time to allow for tendering to commence in February 2006, it was confident that the works would be completed by mid- 2007.³⁹

Costs

Sale of Demountables

- 3.29 The Committee was interested to know whether the CSIRO would accrue any significant revenue from the proposed disposal of the demountable buildings currently located at the Waterford site. CSIRO responded that it did intend to sell the demountables, but did not expect the sale price to generate substantial funds.⁴⁰

Present and Prospective Public Value

- 3.30 The Committee was pleased to receive evidence in support of the proposed extension project from the CUT, the DOIR, the DOIR Chemistry Centre and the Parker Centre.⁴¹ Witnesses emphasised the importance of minerals research and development to the Australian economy and welcomed the proposed extension as the first step in the development of a world-class Minerals and Chemistry Research and Education Precinct at Waterford, which would enable Australia to retain a competitive position in the global minerals industry.⁴²
- 3.31 The specific benefits anticipated by the organisations represented at the public hearing included:
- increased collaboration between hydrometallurgy specialists across academia and industry;
 - an improved ability to attract students to the discipline and to foster their development, thereby addressing a skills shortage in the industry;
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39 Appendix D, Official Transcript of Evidence, page 14

40 *ibid*, pages 8 - 9

41 See *Volume of Submissions*, Submissions No.2, 3, 6 and 7 and Appendix D, Official Transcript of Evidence, pages 18 - 29

42 See *Volume of Submissions*, Submission No. 7 and Appendix D, Official Transcript of Evidence, page 27

- opportunities to share equipment and resources, and to acquire equipment which would be economically unviable for any single agency.

Recommendation 1

The Committee recommends that the proposed extensions to the Commonwealth Scientific Industrial Research Organisation minerals laboratory at Waterford, Perth, WA proceed at the estimated cost of \$12 million.

Hon Judi Moylan MP

Chair

9 November 2005

