Chapter 3 PROJECT EVALUATION AND RECOMMENDATIONS

CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS

3- 1 Project Effect

As mentioned before, the USP is providing remote Pacific Ocean island countries with distant education activities through the USPNet, and hence providing assistance in the ICT field of the USP is deemed as a great contribution to alleviation of the digital divide, one of the objectives of this Project.

The number of applicants to enter the USP is constantly on the rise, and particularly ICT and accounting related courses attract these students. However, the Department of Computer Science is located in a wooden building, which was urgently constructed, where space and computers available for students are totally in shortfall and the environment for computer installation is really poor.

The implementation of this Project will benefit not only the students at the USP but also 12 Pacific Ocean island countries through improvement of the ICT environment.

The effects expected as outcomes of the Project are summarized as follows.

Table 3-1 Project Effects and Degree of Improvement over Current State

Current state and problems	Countermeasures through the project (project component to be undertaken)	Effects from the project and degree of improvement
The Pacific Ocean region is ruled by unique geographic conditions, with the islands being scattered over a broad expanse of ocean, and there is a significant information differential, or 'digital divide,' in the region. Moreover, the communication infrastructure itself is undeveloped, making human resources development difficult, and there has been no development to date of industries utilizing IT. At the same time, the number of applicants entering the USP is constantly on the rise, and incoming students are particularly interested in ICT and Accounting. However, the Department of Computer Science is located in pre-fabricated wooden buildings with insufficient space, and the number of computers for student use is also insufficient, while the facilities and equipment are in a state of deterioration and disrepair.	An 'ICT Centre' will be built on the Laucala Campus of the University of the South Pacific, consisting of a Common Area that includes a Multi-purpose Lecture Theatre large enough to accommodate 300 people, a Department of Computer Science, an IT Services Division, a Research and Development Department, and a Department of Engineering, and equipment and materials for the Centre will be procured.	· The computer learning environment at the University of the South Pacific will be refurbished, and the number of incoming students in the ICT field will increase, as well the number of students graduating and the number of students who find employment after graduating. · The information differential in Fiji (population approximately 848,000) and the South Pacific island nations (population approximately 1.1 million) will be mitigated. · The number of USP students who will directly benefit is a combined 16,444 students (2004) from the campuses on the 12 South Pacific island nations, including Fiji, but it is also expected that implementing the Project will promote socio-economic development as a result of the development of information communication technology in the South Pacific island nations.

It is thought that the effects of the Project should appropriately be evaluated at some point after 2008, when the final transfer of the facilities and equipment takes place.

Table 3-2 Indicators of Project Achievements

Success indicator	2004	After the opening of the ICT centre
Number of the ICT relation curriculum	49 courses/year	88 courses/year
Possibility opening hours of the ICT education courses for adult	24 hours/week	48 hours/week

① No. of ICT related curricula

The number of ICT-related curricula will be increased as a result of developing the ICT Centre and securing a necessary number of laboratories.

② Hours for ICT-related courses designed for adults

The number of hours of courses for adults will be increased by developing the ICT Centre and increasing the number of dedicated laboratories.

In addition to the above, implementing the Project is expected to provide the following direct and indirect effects to the USP.

(1) Direct effects

- The ICT educational environment will be improved by increasing the number of computers to be used by the growing number of new students, particularly in ICT and Accounting courses, from 402 to 742（including 446 units to be installed in the ICT Centre (285 of which are to be procured by Japan) and 296 units in the existing facilities）.
- The environment for the computers in the Department of Computer Science will be improved from the poor conditions in the wooden building which uses dangerous insulation materials for the sake of air-conditioning efficiency.
- The computer laboratories will be improved so that the number of curricula at the Department of Computer Science can be increased from 49 courses in 2004 to 88 courses per year.
- By constructing the Multi-purpose Lecture Theatre with an accommodation capacity of 300 persons, one of the three existing lecture halls, which constantly has a population density double its capacity of 242, will be improved.
- The capacity for ICT-related training courses designed for adults will be increased from 24 hours/week to 48 hours/week.

- The liability of the internal network environment in the University will be enhanced through improving the equipment and setting environment for the server of the IT Services Division.
- The internal telecommunications within the University will be strengthened by improving the operational environment through facilitating the speeding-up of the USPNet.
- The R&D segment will be reinforced by developing the Department of Research and Development, which can carry out joint researches and developments with external institutions.

(2) Indirect effects

- Setting up a central educational and research centre for information and communications technology within the USP will encourage the Pacific Ocean island nations to fully participate in the global information society.
- Fiji and other Pacific island countries will lead the research and development in the ICT field by leveraging the Centre, and hence will be able to develop ICT potential to contribute to human resources development, education, environmental preservation, and development of society and culture in the field of media.
- The Department of Engineering to be newly established will resolve the lack of engineers in this field on the islands.
- The ICT educational environment will be strengthened thereby increasing the number of workers in the ICT-related fields.

3-2 Recommendations

(1) Issues and proposals

In order to utilize the facilities built and the equipment and materials procured as a result of implementing the Project to the maximum limit, and to realize and sustain the results of the Project implementation, the following issues have been identified as those that must be addressed by the Government of Fiji and by the USP.

1) Maintenance of the facilities and equipment

Financially, the university is not encumbered by deficits, and is maintaining a sound financial situation. In addition to the total amount required for heating and lighting expenses, communication expenses, maintenance control and building repair expenses being assured at approximately 10% of annual expenditures, the Department of Planning & Facilities oversees maintenance of the various facilities, with an organizational structure that involves around 70 persons in all. Thus, the management and maintenance control capability is regarded as being fully adequate.

With respect to IT equipment and materials, all IT equipment and materials are handled by

the IT Services Division, and no problems are foreseen in terms of the ability to carry out management and maintenance control capability of facilities and equipment in the ICT Centre.

However, because the computer laboratory is at the core of this facility, it was found that the floor space devoted to air conditioning amounts to just under 60% of the overall facility. Taking the service life of the equipment into consideration, it is suggested that sufficient maintenance of the air-conditioning equipment will need to be carried out, and sufficient funds will need to be assured to cover the cost of electricity usage.

2) Upgrading of the USPNet

The current system uses digital technology dating back to around 1995, so the frequency bandwidth is such that the channels for all of the USP branch schools are fixed. Consequently, the channels of countries with high demand do not provide sufficient speed and efficiency is poor. The USP is planning to upgrade the current USPNet to a system in which Internet technology can be used (higher speeds can be accommodated). Because the Project was designed on the assumption that this upgrade will be implemented, it is hoped that the upgrade of the USPNet can be completed by the time that the ICT Centre is completed, with cooperation from the USP.

3) Internet environment

As a result of cooperation from the Government of Australia in 2005, connections were made to the AARNET (Australian Academic Research Network) through Southern Cross Cable on March 4, 2005, and the Internet connection environment was significantly improved, from 1 Mbps to 155 Mbps.

At the same time, however, in view of future advances in Internet technology, it is hoped that the Internet connection environment will continue to be augmented and strengthened following the opening of the ICT Centre.

〔APPENDICES〕

1. Member List of the Study Team

1-1 Basic Design Study

	Position	Name	Period	Organization
1	Leader	Mr. MAKINO Osamu	February 7 ～February 17	Institute for International Cooperation, Japan International Cooperation Agency
2	Planning Management	Mr. TAKENAKA Narufumi	February 7 ～February 17	Education Team, Project Management Group I, Grant Aid Management Department, Japan International Cooperation Agency
3	Chief Consultant／ICT Education・Training planning	Mr. KOIKE Hiroyuki	February 7 ～March 12	Azusa Sekkei Co., Ltd
4	ICT equipment・Planner／Cost estimation	Mr. DOI Yasumichi	February 8 ～March 9	Azusa Sekkei Co., Ltd
5	Architectural Design	Mr. YAMAMOTO Masaichi	February 7 ～March 12	Azusa Sekkei Co., Ltd
6	Construction Planner・ Procurement／Cost estimation	Mr. HOSHIAI Yoshifumi	February 7 ～March 8	Azusa Sekkei Co., Ltd

1-2 Draft report explanation

	Position	Name	Period	Organization
1	Leader	Mr. MAKINO Osamu	August 17 ～August 26	Institute for International Cooperation, Japan International Cooperation Agency
2	Chief Consultant／ICT Education・Training planning	Mr. KOIKE Hiroyuki	August 15 ～September 1	Azusa Sekkei Co., Ltd
3	ICT equipment・Planner／Cost estimation	Mr. DOI Yasumichi	August 15 ～August 27	Azusa Sekkei Co., Ltd
4	Architectural Design	Mr. YAMAMOTO Masaichi	August 19 ～August 27	Azusa Sekkei Co., Ltd
5	Construction Planner・ Procurement／Cost estimation	Mr. HOSHIAI Yoshifumi	August 15 ～September 1	Azusa Sekkei Co., Ltd

2. Study schedule

2-1 Basic design study

From 7 February 2005 to 12 March 2005 (34days)

7 February	Mon	19:00	Dep. Narita by FJ303
8 February	Tue	06:45 14:00-15:00 15:00-15:30 16:00-17:00	Arrive Nadi Courtesy call to JICA Fiji office Courtesy call to Embassy of Japan Visit Embassy of New Zealand
9 February	Wed	11:00-11:45 14:00-15:00 15:00-17:00	Courtesy call to Ministry of Education Courtesy call to Technical co-operation Courtesy call to USP, General Meeting
		21:00	Mr. Doi arrived at Suva.
10 February	Thu	08:30 09:30 11:30 14:30	Meeting with Dr. Esther Meeting with Librarian. Meeting with the people from Remote Education, Computer Science, Faculty of Arts. Visit Embassy of Australia and Aus AID
11 February	Fri	9:00 11:00 14:00 16:00	Meeting with Mr. Terence Broad and Ms. Mary Pat Lawlor from facility section. Meetin with Mr.Keith Moala from USP-net section. Re-submitted the curriculum and list of equipments to Dr.Kan Kiu Hing from Engineering section. Meeting with IT service section Meeting with GIS section
12 February	Sat	9:00 11:00 14:00	Meeting with people from Performing arts. Meeting with people from Computer Science. Internal Meeting
13 February	Sun		Document study.
14 February	Mon	9:00－17:00	Internal Meeting
15 February	Tue	9:00 17:00	Internal Meeting Signing on Minutes.
16 February	Wed		Report to JICA Fiji Office. Report to Embassy of Japan. Meeting with USP. Internal Meeting. Schedule arrangement.
17 February	Thu	10:00 11: 00 14:30	Site survey. Schedule arrangement with USP. Meeting with people from Computer Science.
18 February	Fri	06:45 9:00 14:00	Mr. Hoshiai arrived at Suva. Meeting with people from Computer Science. Site survey.
19 February	Sat	9:00－17:00	Internal Meeting.
20 February	Sun	06:45	Mr. Yamaguchi arrived at Suva
21 February	Mon	09:00 14:00 16:00	Meeting with people from IT service. Visit Fiji telecom. Meeting with people from Fiji Electricity Authority.
22 February	Tue	09:00 14:00 16:00	Meeting with people from IT service. Meeting with people from Computer Science. Site survey.
		09:0O－16:00	Cost survey (Mr. Hoshiai)
		14:00	Report to JICA Fiji Office (Mr. Koike and Mr. Yamaguchi)
23 February	Wed	10:00 15:00	Visit MOC Discuss on facility standard with facility section Manager of USP.
		09:0O－16:00	Cost survey (Mr. Hoshiai)
24 February	Thu	9:00 11:00 14:00 15:00 16:00	Meeting with GIS section. Site survey. Meeting with Fiji Investment. Meeting with ATH. Meeting with Multi-Media section.
		09:0O－16:00	Cost survey (Mr. Hoshiai)
25 February	Fri	9:00 14;00	Meeting with people from RDI section. Visit Fiji Institute of Technology.

26 February	Sat	AM	Internal meeting
		10:00	Mr. Yamaguchi left Nadi.
27 February	Sun	AM	Study on site planning.
28 February	Mon	9:00 10:00 14:30 16:00	Meeting with Topological survey contractor. Internal Meeting. Visit Civic Hall. Visit CONNECT , ISP.
		9:00	Meeting with people from Computer Science.(Mr. Doi)
1 March	Tue	9:00 10:00 14:00 16:00	Meeting with Topological survey contractor. Meeting on the engineering section. Meeting on the RDI section. Meeting on the facility volume and contents.
		09:00-16:00	Cost survey (Mr. Hoshiai)
2 March	Wed	09:00 10:00 11:00 13:00 14:15 16:00	Internal Meeting. Meeting with people from Computer Science. Meeting with people from Library. Meeting with people from engineering section. Visit Meteorological office. Visit Seismic laboratory.
		09:00-12:00	Cost survey (Mr. Hoshiai)
3 March	Thu	9:00 10:00 11:00 14:00 16:00	Meeting with GIS section. Meeting with IT service. Meeting with people from Performing arts. Study on the facility volume and contents. Meeting with people from engineering section.
		09:00－16:00	Materials survey (Mr. Hoshiai)
		14:00	Hearing from Students.(Mr. Yamamoto and Hoshiai)
4 March	Fri	9:00 11:00-13:00 14:00 15:00 16:00	Meeting with people from Library. Opening ceremony of AARNET. Meeting with people from RDI. Meeting with people from engineering section. Study on the facility volume and contents.
		10:00 11:00	Meeting with GIS section. (Mr. Doi) Meeting with IT service. (Mr. Doi)
		09:00－16:00	Study on Site Plan (Mr. Yamamoto)
5 March	Sat	9:00 14:00	Internal Meeting. Study on Site Plan (Mr. Yamamoto)
6 March	Sun	AM・PM	Document study
7 March	Mon	AM 15:00 16:00	Draft on the Technical Note. Meeting with people from RDI. Discuss on the common Area.
		PM	Survey on the equipment agents. (Mr. Doi)
		07:00	Mr. Hoshiai left Suv.
8 March	Tue	8:30 14:15 15:00 16:00	Courtesy to new vice-chancellor. Discuss on the technical note. Meeting with people from Computer Science. I Meeting with IT service. Internal meeting.
		07:00	Mr. Doi left Suva.
9 March	Wed	9:00 11:00 14:15	Meeting with people from engineering section. Meeting with GIS section. Meeting with RDI section. Analyze the collected information.
10 March	Thu	9:00 11:00 14:00 16:00	Meeting with people from Computer Science. Meeting with people from engineering section. Meeting with GIS section. Signing the technical Note.
11 March	Fri	AM PM	Meeting with people from Computer Science., Document study. Visit JICA Fiji office and embassy of Japan.
12 March	Sat	10:00 17:00	Left Nadi by FJ302. Arrived Narita.

2-2 Draft report Explanation

From 15 August 2005 to 1 September 2005 (18days)

15 August	Mon	19:00	Departure Narita by NZ90(Mr. Koike. Mr. Doi and Mr. Hoshiai
16 August	Tue	16:00 19:00	Arrive Nadi Arrive Suva
17 August	Wed	09:00-10:00 10:00-10:30 14:00-14:30 16:00-17:00	Courtesy to JICA Fiji office. Courtesy to Embassy of Japan. Visit ADB Fiji office. Courtesy to USP. (Vice-Chancellor Anthony Tarr, Acting vice-chancellor; Ether Williams.
18 August	Thu	09:00-15:00 16:00	Scheme presentation to USP Visit EU office.
19 August	Fri	09:00-17:00	Discussion on the planning with USP people.
20 August	Sat	09:00-17:00	Discussion on the planning with USP people.
21 August	Sun	09:00-12:00 14:00-17:00	Internal meeting. Discussion on the planning with USP people.
22 August	Mon	09:00-17:00	Discussion on the draft of the Minutes.
23 August	Tue	09:00 10:30 14:00 14:30 16:00	Discussion on the planning with Computer Science section; professor Chris and professorJito. Discussion on the planning with engineering section; professor Hin Khang. Discussion with bursar. Discussion on the draft of the Minutes; with Mr. Mark Lewis; Planning Department and Ms Ether Williams; acting vice-chancellor. Meeting with Mr. Kisione form IT service.
24 August	Wed	09:00 10:30 14:00 15:30	Meeting with National Fire Authority. Visit Pharmaceutical warehouse and Medical school. Signing Minutes. Meeting with FEA.
25 August	Thu	09:00 10:00 14:00 16:00	Report to JICA Fiji office. Report to Embassy of Japan. Meeting on OHS（Occupational Health and Safety）with people of Ministry of Labour. Materials survey.
26 August	Fri	08:30 09:30	Meeting with elevator contractor. Discuss on the general issue with Mr. Terrence Broad and Dr. Esther Williams. ＜Mr. Yamamoto and Mr. Doi moved to Nadi＞
27 August	Sat	08:30 15:00	Materials and cost survey. Meeting on Techinical note. ＜Mr, Yamamoto, and Mr. Doi arrived at Narita.＞
28 August	Sun		Internal meeting, Document study.
29 August	Mon	09:00 14:00 15:00 17:00	Meeting on Radio pacific with Ms Linda Austin. Meeting with FEA. Meeting on architectural issue with Mr. Terence Broad. Visit Lami-Port site.
30 August	Tue	09:00-14:00 16:00 18:00	Meeting on technical note with Mr. Mark Lewis. Meeting on the construction permit at Suva city council Report to JICA Fiji office.
31 August	Wed	09:00 12:00	Signing technical note. Mr. Koike and Mr. Hoshiai left Suva.
1 August	Thu	10:00 17:00	Depart Nadi by FJ302 Arrive Narita

3. List of Parties Concerned in the Recipient Country

Ministry of Education	
Mrs. Alumita Taganesia	Permanent Secretary
Mrs. Salote Rabuka	Manager Examination
Mr. Josefa Natau	Manager TVET
Mr. Vilimone Dranivesi	Permanenet Secretary in Computer
Mr. Namani Drova	CDU Permanent Secretary
Mrs. Unaisi Lekenaua	Permanent Secretary in education

University of South Pasific（USP）	
Prof. Anthony Tarr	Vice- Chancellor
Prof. Rajesh Chandra	Vice- Chancellor
Dr. Esther Williams	Acting vice-chansellor
Mr. Walter Fraser	Registrar
Mr. Graeme Latham	Bursar
Mrs. Ilaisaane Pongi	Planning Office
Mr. Terence Broad	Director, properties and facilities
Mrs. Mary Pat Lawlor	Director, properties and facilities
Mr. John Bonato	Manager Remote education
Dr. Anjeela Jokhan	Acting Head school of Science.
Dr. Jito Vanualailai	Head of Department & senior lecturer in mathematics
Prof. Christian Duibli	Senior lecturer in Computing Science
Mr. Kisione Wesley Finau	Director IT service
Mr. Josese Ravuvu	IT service
Mr. Sam Fonua	IT service
Mr. Simon Greaves	IT service
Mr. John Isles	IIT service　network analyst
Mr. Keith Moala	Manager USP-Net
Mr. Alan Lifton	Director
Ms. Linda Austin	Media Centre, Resource co-ordinator.
Dr. Ian Gaskell	Professor theater arts
Mr. Geoffrey Cleave	System Manager in Library
Ms. Elizabeth Fong	Librarian
Ms. Joan Yee	Vice Librarian
Dr. Ropate R. Qalo	Head of Social & Economic Development
Dr. Akanisi Kedrayate	Head of School of Humanities
Prof. Godfrey Onwubolu	Head of Engineering
Dr. Kan Kiu Hing	Senior lecturer in Engineering
Mr. Alokanand Sharma	Lecturer in Engineering
Prof. Patrick D. Nunn	Professor Geology
Dr. Nick Rollings	Senior lecturer in GIS
Dr. Gennady Gienko	Lecturer in GIS

Embassy of Japan	
Iino Kenro	Ambassador
Miyata Kenji	Minister
Takaya Shigeki	First Secretary
Kubo Mayumi	Second secretary
Watanabe Hiroshi	Second secretary
JICA Fiji Office	
Ikeshiro Tadashi	Resident representative
Wakasugi Satoshi	Assistant Resident representative

Embassy of Australia	
Ms. Stacey Tennant	Second secretary

Mr. Jone Vakaloloma	Senior manager AusAID
Mr. Padric Harm	Acting manager AusAID
Embassy of New Zealand	
Mrs. Diane Waller	Executive officer
Mr. Dimitri Gaidelberg	NZAID Manager(Regional)
JICA 専門家	
Mr. Kuroiwa Hiroshi	Chief advisor
Ms. Kato Maki	Project cocrdinator
Dr. Kader Hiroshi pramanik	JICA expert
ADB	
Ms. Sirapa H. JARVENPAA	Regional Director
EU Fiji office	
Mr.Roberto RIDOLFI	Ambasaador
Fiji Fire Authority	
Mr. Tupou Saulinayau	Department of Fire security
Mr. Ishikeli Tamanisau	Fire Services
Telecom Fiji Limited	
Mr. Joe Mar	Chief Executive Officer
Mr. Norman Nicholls	Chief Operation Officer
Mr. Sakeasi Seru	General Manager, Network Technology
Connect	
Mr. ATISH Charan	Manager corporate business solution
Mr. Alfred Prasad	Director of Technology
ATH	
Mr. Brendan Harrison	Manager strategy
Fiji Electricity Authority	
Mr. Colin Tan	Manager Information & Communication Technology
Mr. Omid Saberi	IT Strategic Development Manager
Ministry of Labour	
Mr. Ishimeli Tuivaga	Director Health Service
Fiji Investment	
Mr. Atma Maharaj	Chief Executive officer
Metrological Office	
Mr. Asao Ali	Officer in charge Nausori Airport
Seismic Laboratory	
Mr. Lasausa Vietibau	
Fiji Institute of Technology	
Mr. Meli Tuqua	Head of school
Mr. Salabogi L. Mavoa	Manager computer service
Fletcher construction	
Mr. Brian Ashmore	
J.S. Hill&Associate	
Mr. John S. Hill	Director
Raghwan construction Co., Ltd.	

Mr. Vijay Raghwan	Managing Director
Entec Ltd	
Mr. Pratap Singh	Managing Director
Wood & Jepsen Consultants	
Mr. Rod Jepsen	Principal
Engineered Designs	
Mr. Vijay Krishnan	Director
Sinclair Knight Merz	
Mr. John Campbel	Managing Director

4. Minutes of discussions of Basic Design Study

MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR THE CONSTRUCTION OF THE UNIVERSITY OF THE SOUTH PACIFIC INFORMATION AND COMMUNICATION TECHNOLOGY CENTRE IN THE REPUBULIC OF THE FIJI ISLANDS

Based on the results of the Preliminary Study, the Government of Japan decided to conduct a Basic Design Study on the Project for the Construction of the University of the South Pacific Information and Communication Technology Centre (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA")

JICA sent to the Republic of the Fiji Islands (hereinafter referred to as "Fiji") the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr Osamu Makino, Senior Advisor, Institute for International Cooperation of JICA, and is scheduled to stay in the country from February 8th to March 12th, 2005

The Team held discussions with the officials concerned of the Government of Fiji and also with the University of the South Pacific conducted a field survey at the study area

In the course of discussions and field survey, all parties confirmed the main items described in the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report

Suva, February 15th, 2005

Mr. Osamu Makino
Leader
Basic Design Study Team
Japan International Cooperation Agency

Professor Rajesh Chandra
Acting Vice Chancellor
University of the South Pacific

Mrs Alumita Taganesia
Chief Executive Officer
Ministry of Education
Republic of the Fiji Islands

ATTACHMENT

1 Objective of the Project

The objective of the Project is to strengthen the capacity of the University of the South Pacific (USP) to deliver quality ICT education, training and related research and development to more Pacific Islanders through the establishment of the Information and Communication Technology Centre (hereinafter referred as "the ICT Centre")

2 Project site

The site of the Project is at the Laucala Campus of USP as shown in Annex-1

3 Responsible and Implementing Organization

3-1 The responsible organization is the Ministry of Education

3-2 The implementing organization is USP

The current organization chart of USP (with the proposed ICT Centre) is attached as Annex-2-1

The organization chart of project development for the ICT Centre is attached as Annex-2-2

The organization chart of the ICT Centre is attached as Annex-2-3

4 Items requested by the Government of Fiji

After discussions with the Team, the items described in Annex-3 were finally requested by Fiji side JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval

4-1 Construction of the Buildings and Facilities

Major items are listed in Annex-3-1

4-2 Procurement of the Equipment

Major items are listed in Annex-3-2

5 Japan's Grant Aid Scheme

Fiji side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Fiji as explained by the Team and described in Annex-4 and Annex-5 of the Minutes of Discussions signed by both parties on February 15th, 2005

6 Schedule of the Study

6-1 The consultants will proceed to further studies in Fiji until March 12th, 2005

6-2 JICA will prepare the draft report in English and dispatch a mission in order to explain its contents in June 2005

6-3 Upon acceptance of the report in principle by the Government of Fiji and USP, JICA will complete the final report and send it to the Government of Fiji by August 2005

7 Other relevant issues

7-1 Naming of the ICT Centre

Both sides agreed in principle that the ICT Centre would be named as "Japan-Pacific ICT Centre" for a better cooperation between the Pacific region and Japan.

7-2 Curricula at the ICT Centre planned by USP

In the series of discussions USP explained the curricula, including education, training and related research and development programs, at the ICT Centre. The consultants will confirm the further details of the curricula, and then JICA will assess the appropriateness of the curricula for the achievement of the project objective and confirm the consistency between the curricula and the requested items.

7-3 Priority in the requested items

The Team explained that the contents of request were expanded through the several revisions by USP, therefore the requested items shall be squeezed to minimum items, numbers and specifications necessary for the achievement of the project objective. USP recognized and promised to give the order of the final priority to the requested items by March 10th, 2005.

7-4 Lecture Theater and Multipurpose Digital Performing Arts Theater

USP requested two large-scale theaters, the Lecture Theater and the Multipurpose Digital Performing Arts Theater. The Team explained that it was difficult to provide the two large-scale theaters under the policy of the Japan's Grant Aid. The Team proposed combining the two theaters into one air conditioned Multipurpose Theater having a stage and 300~500 seats. USP requested an opportunity to further consider this issue and promised to convey its final view by March 10th, 2005.

7-5 Procurement of the application software

The Team explained that it was difficult to procure application software which USP wanted because particular software could not be designated in tender. USP recognized and agreed to procure the application software needed for the Project by USP, except for the operating systems.

7-6 Criteria for items selection

Both sides agreed on the criteria for items selection as described in Annex-6. Nevertheless, the contents covered by the Project will be finalized after further study in Japan.

7-7 Target Year

Both sides confirmed that the ICT Centre would be targeted to become operational in 2008.

7-8 Operation and maintenance

USP agreed to allocate necessary budget and sufficient number of teaching, technical and administration staff for the proper operation and maintenance of facilities and equipment procured by the Project.

7-9 Necessities of Technical Cooperation

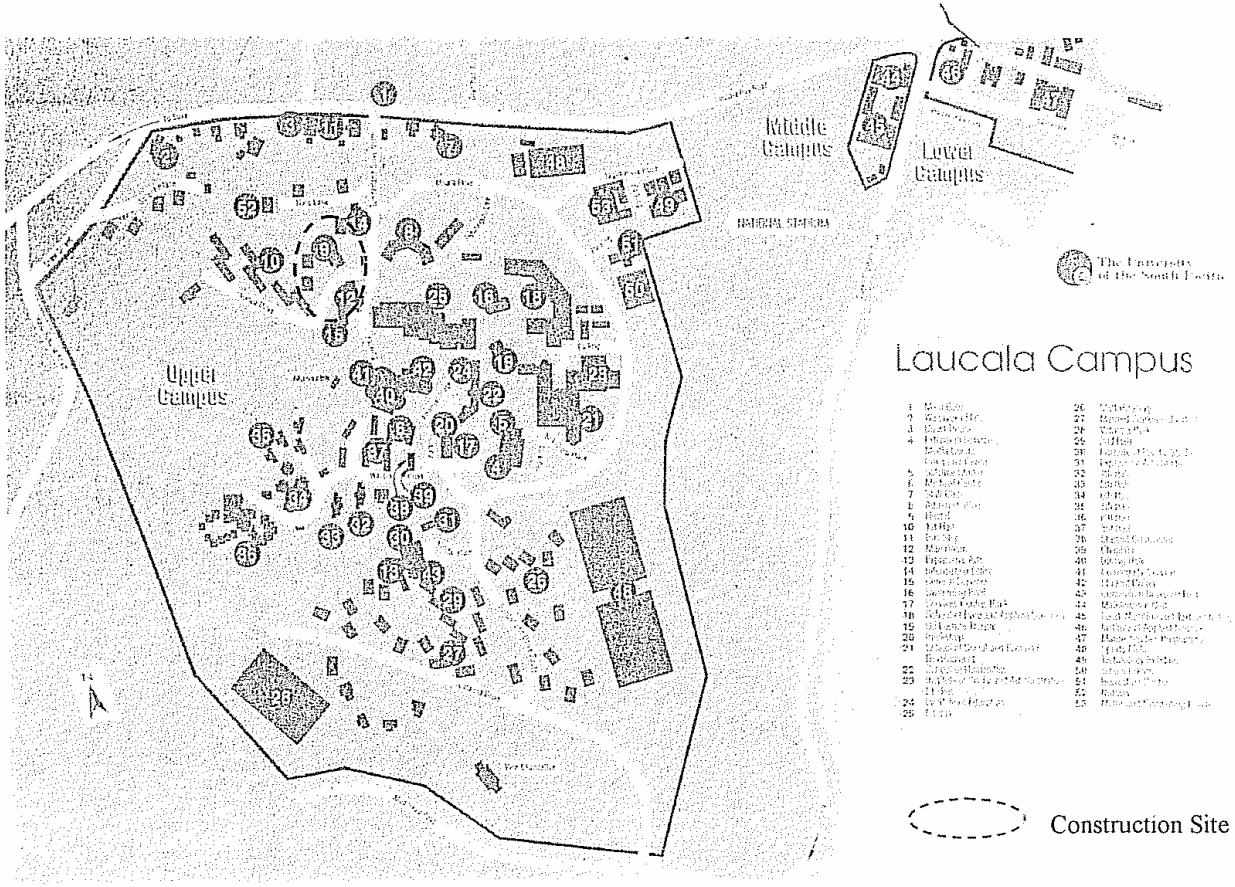
For the sake of the technology transfer on sustainable management and activities of the ICT Centre, the Fiji side pointed out the need for dispatch of Japanese experts as well as technical training of counterpart personnel in Japan. They also understood that separate official request on technical cooperation should be submitted through the Embassy of Japan and/or the JICA Fiji Office.

7-10 Project plans at the ICT Centre financed by any other donors

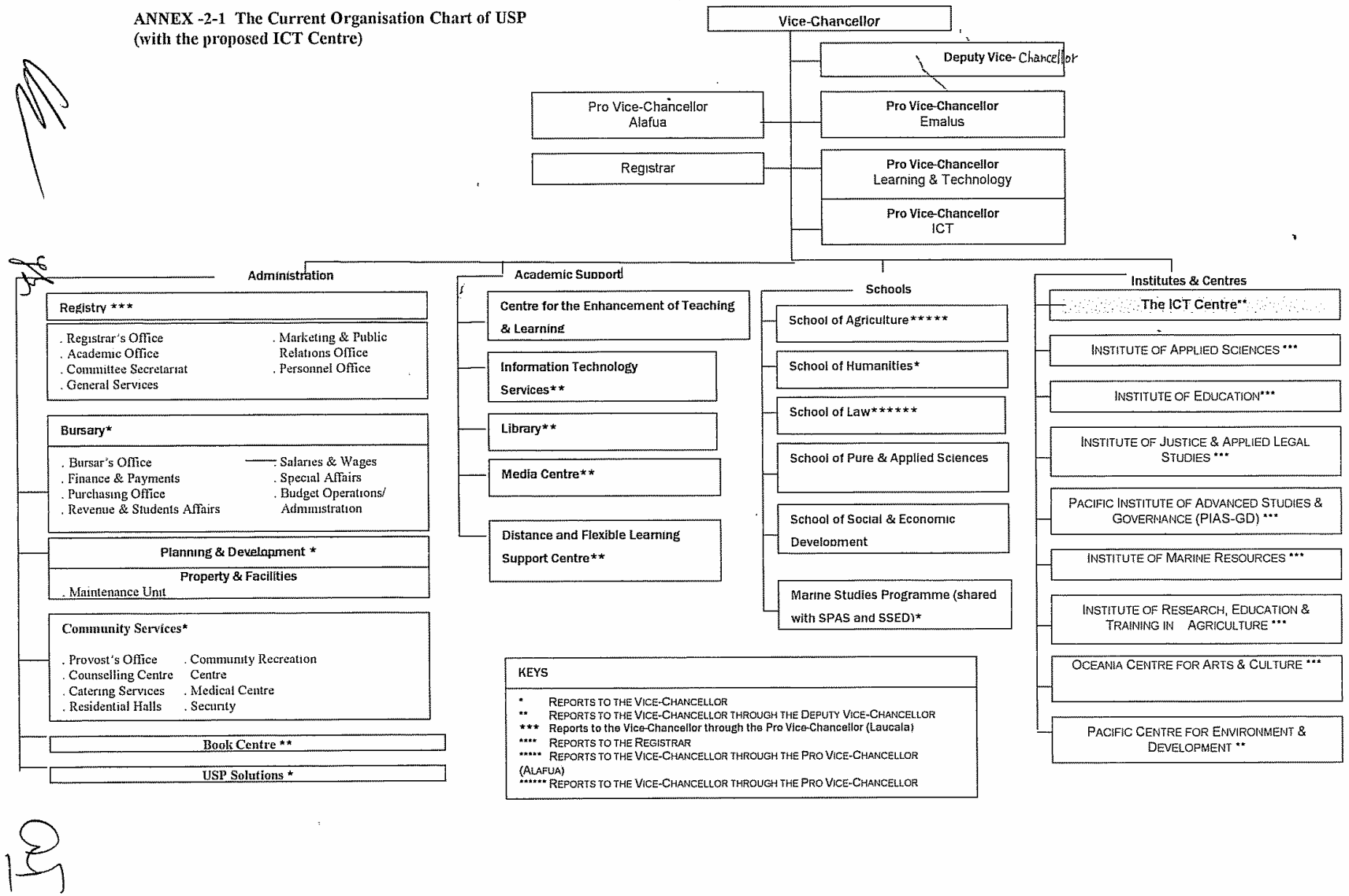
The Team requested USP to provide ICT related activities and plans financed by any other donors to enhance collaboration and to avoid duplication. USP has agreed to keep the Team fully informed on ICT related activities and plans by the end of February 2005.

Annex-1. Location map of the Project
Annex-2. Organization chart of USP/Project Development/the ICT Centre
Annex-3. Major items requested by the Government of Fiji
Annex-4. The Japan's Grant Aid Scheme
Annex-5. Necessary undertakings to be taken by each government
Annex-6. Criteria for items selection

Annex-1: Location map of the Project

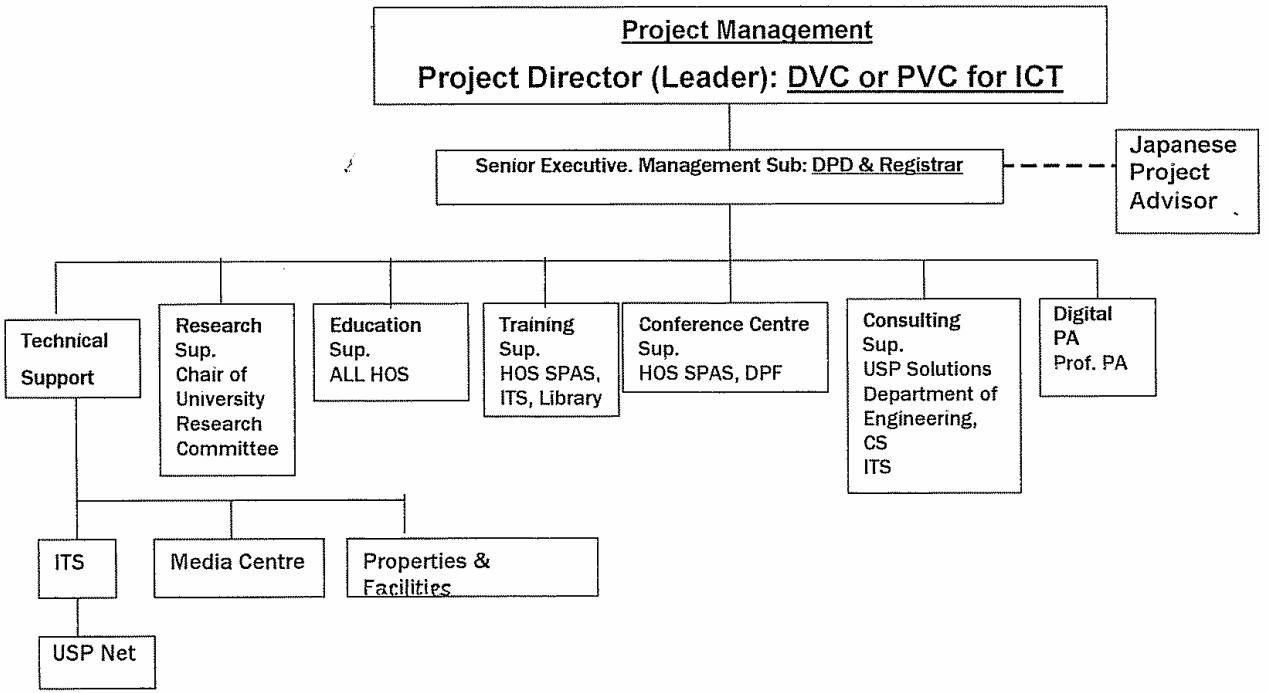


ANNEX -2-1 The Current Organisation Chart of USP
(with the proposed ICT Centre)



Annex -2-2

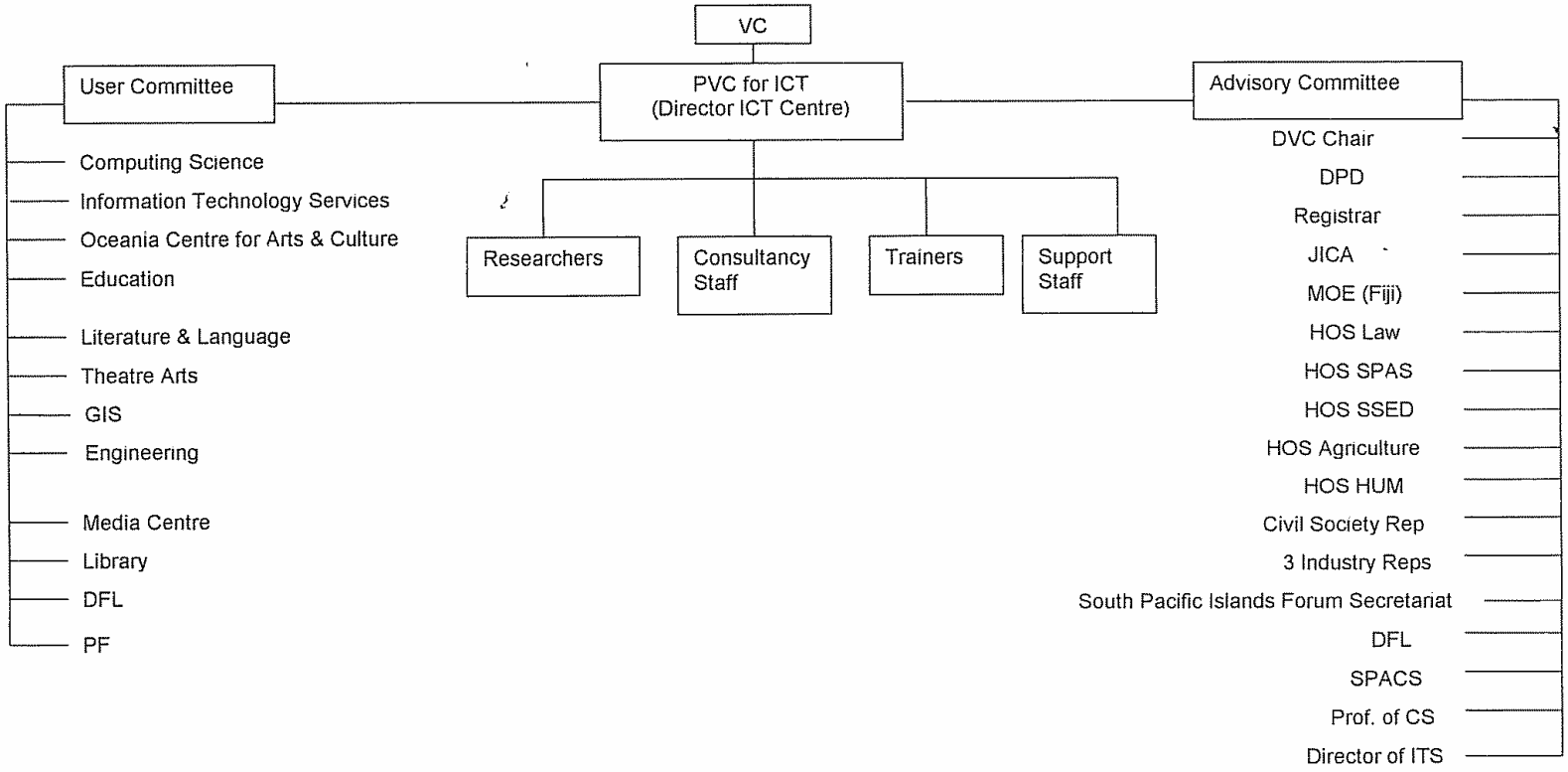
Organization Chart of Project Development for the ICT Centre



DVC-Deputy Vice Chancellor, PVC-Pro Vice Chancellor, DPD- Director Planning & Development, RC – Research Committee, HOS – Head of School, SPAS – School of Pure and Applied Sciences, PA – Performing Arts, GIS – Geographical Information Systems and DPPF – Director Physical Planning and Facilities

Annex-2-3

Organization Chart of the ICT Centre



VC-Vice Chancellor, DPD- Deputy Vice Chancellor, PVC-Pro Vice Chancellor, DPD- Director Planning & Development, MOE – Ministry of Education, HOS – Head of School, SPAS – School of Pure and Applied Sciences, HUM – Humanities, SPACS – South Pacific Computer Society.

Annex – 3-1: Major items requested by the Government of Fiji for the ICT Centre at USP (Buildings and Facilities)

Department	Facility Name	Remarks
Common Area	Multipurpose Theater	Air Conditioned, 300 – 500 Seating
	Lecture Halls	For 200 persons x 4, Flat foor
	Office – Senior Staff	
	Office – General Staff	
	Tutorial Room	
	Video Conference Room	
	Conference Room	
	Office – Director ICT	
	Office – Core Staff ICT	
	Interaction Rooms	
	Staff Common Room	
	ICT Resource Room	
	Digitization Room	
	'Radio Pacifik' Room	
	Common Space	Reception, Corridor, Toilet, etc.
Computing SC	Academic Staff Offices	
	Technical Staff Offices	
	Administration Staff Offices	
	Tutor Offices	
	Visiting Staff Offices	
	Research Laboratories	
	Dedicated Networking Teaching Laboratory	For 40 persons
	General Access Computer Laboratory	For 60 persons x 4, shared with other departments
	Dedicated Computer Teaching Laboratory	For 40 persons x 3
	Tutorial Seminar Rooms	For 30 persons x 10
	Technical Work Room	
IT Service	Offices - Directors ITS	
	Office - Secretary	
	Laboratory	For 26 persons x 4
	Laboratory	For 50 persons x 8

	Laboratory	For 11 persons
	Offices	
	Workshop	
	Server Room	
	Storage Rooms	Network & computer storage
	Meeting Room	
	Helpdesk & Waiting Area	
	Hub Earth Station	
	USP Net Control Room	
GIS	Office, Director	
	Office, Lectures & Officers	
	Postgraduate Room	
	Geospatial Science Computer Learning Space	For 47 persons
	Geospatial Database Server Simulation Lab	For 10 persons
	10 "Seat" Research Laboratory	
	Equipment Room	
	Data Warehouse	
Engineering	Offices, Directors	
	Electrical Laboratory	
	Electronics Laboratory	
	Mechatronics Laboratory	
	Communication Laboratory	
Research and Development	Office – Research / Incubator	Partnership with Industry
	Test Bed Research / Incubator	
	Computer Labs Research	
	Workshop	

Annex-3-2 Major Items requested by the Government of Fiji for the ICT Centre at Suva (Equipment)

Category	Equipment Name
1 Equipment for Common Area	LCD Projector
	Projection screen
	DVD Player
	PA system
	OHC
	Microfilm Reader / Film Scanner
	Video Conference System
	PCs
	Digital Camcorder
2 Equipment for Computing Science	Servers
	PCs
	Routers
	Switchers
	Patch Panels
	Digital Oscilloscopes
3 Equipment for IT service	Servers
	PCs
	Printers
	UPS
	Switchers
	Backup equipment for data
4 Equipment for GIS	Servers
	PCs
	Field Spectrometer
	GPS Mobile Mapping System
	Scanners
5 Equipment for Department of Engineering	Digital Oscilloscopes
	Signal Generator
	Power Supply
	Servers
	PCB Etching Machine
	Bread Board
6 Equipment for Research and development	Three axis Magnetometer
	Spectrum analyzer
	Vector network analyzer
	VHF transmitter/receiver
	Digital Oscilloscope

Annex – 4: The Japan's Grant Aid Scheme

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedure

1) Japan's Grant Aid Program is executed through the following procedures.

Application (Request made by a recipient country)
Study (Basic Design Study conducted by JICA)
Appraisal & Approval (Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation
(The Notes exchanged between the Governments of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request. If necessary, JICA send a Preliminary Study Team to the recipient country to confirm the contents of the request.

Secondly, JICA conducts the study (Basic Design Study), using Japanese consulting firms.

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Programme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project"), is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows.

a) confirmation of the background, objectives and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation,

b) evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from the technical, social and economic points of view,

c) confirmation of items agreed on by both parties concerning the basic concept of the Project,

d) preparation of a basic design of the Project, and

e) estimation of costs of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even through they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions

2) Selection of Consultants

For the smooth implementation of the Study, JICA uses a consulting firm selected through its own procedure (competitive proposal). The selected firm participates the Study and prepares a report based upon the terms of reference set by JICA.

At the beginning of implementation after the Exchange of Notes, for the services of the Detailed Design and Construction Supervision of the Project, JICA recommends the same consulting firm which participated in the Study to the recipient country, in order to maintain the technical consistency between the Basic Design and Detailed Design as well as to avoid any undue delay caused by the selection of a new consulting firm

3 Japan's Grant Aid Scheme

1) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

2) "The period of the Grant" means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding contracts with consulting firms and contractors and final payment to them must be completed

However, in case of delays in delivery; installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments

3) Under the Grant, in principle, Japanese products and services including transport or those of the recipient country are to be purchased

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country

However, the prime contractors, namely consulting, contracting and procurement firms, are limited to "Japanese nationals" (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality)

4) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals Those contracts shall be verified by the Government of Japan This "Verification" is deemed necessary to secure accountability of Japanese taxpayers

5) Undertakings required to the Government of the recipient country

a) to secure a lot of land necessary for the construction of the Project and to clear the site,

b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities outside the site,

c) to ensure prompt unloading and customs clearance at ports of disembarkation in the recipient country and internal transportation therein of the products purchased under the Grant Aid;

d) to exempt Japanese nationals from customs duties, internal taxes and fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts,

e) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such as facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work,

f) to ensure that the facilities constructed and products purchased under the Grant Aid be maintained and used properly and effectively for the Project, and

g) to bear all the expenses, other than those covered by the Grant Aid, necessary for the Project

6) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign the necessary staff for operation and maintenance of them as well as to bear all the expenses other than those covered by the Grant Aid

7) "Re-export"

The products purchased under the Grant Aid shall not be re-exported from the recipient country

8) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank") The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the verified contracts

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of recipient country or its designated authority

9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commission to the Bank

Annex-5: Necessary undertakings to be taken by each government

NO	Items	To be covered by Grant Aid	To be covered by Recipient side
1	To secure land		•
2	To clear, level and reclaim the site when needed		•
3	To construct gates and fences in and around the site		•
4	To construct the parking lot	•	•
5	To construct roads		
1) Within the site		•	
2) Outside the site			•
6	To construct the building	•	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
1)Electricity			
a The distributing line to the site			•
b The drop wiring and internal wiring within the site		•	
c The main circuit breaker and transformer		•	
2)Water Supply			
a The city water distribution main to the site			•
b The supply system within the site (receiving and/or elevated tanks)		•	
3)Drainage			
a The city drainage main (for storm, sewer and others) to the site			•
b The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site		•	
4)Gas Supply			
a The city gas main to the site			•
b The gas supply system within the site		•	
5)Telephone System			
a The telephone trunk line to the main distribution frame / panel (MDF) of the building			•
b The MDF and the extension after the frame / panel		•	
6)Furniture and Equipment			
a General furniture			•
b Project equipment		•	
8	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
1) Advising commission of A/P			•
2) Payment commission			•
9	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
1) Marine(Air) transportation of the products from Japan to the recipient country		•	
2) Tax exemption and customs clearance of the products at the port of disembarkation			•
3) Internal transportation from the port of disembarkation to the project site		(•)	(•)

Annex-6: Criteria for items selection

The requested items for the project should specify the appropriate and minimum scale, specification and amount in order to achieve the project objective The criteria for items selection is shown below as the principles for selection

[Priority Principle]
(1) Items that contribute to great extent to achieve the project objective
(2) Items that match the curriculum
(3) Items which use frequency is not low
(4) Items that relates to social necessity and market needs
(5) Items that cannot be replaced as the existing building or equipment
(6) Items that are not planned to be donated from other aid organization
(7) Items that are not easily purchased by USP
(8) Items that don't hold problems to implement (big-scale land development, budget treatment, schedule and procurement)
(9) Items that don't hold problems on the administration and maintenance (budget, personnel, technology, procurement of consumables)
(10) Items with long life expectancy

[Elimination Principle]
(1) Items that needs high maintenance cost
(2) Items that limit the benefit effect
(3) Items that effect per cost is small
(4) Items that can be replaced with the easier one
(5) Items that can only be used for personal use
(6) Items which number exceeds the minimum needs (inefficient and overlapping items)
(7) Items that are not installed or stored outside of ICT center
(8) Consumables

In addition, the items below could be added or deleted by the local conditions.

[Priority Principle]
(1) Items that can be operated with the existing technology level of USP
(2) Items for which the maintenance personnel (including out-sourcing) are kept or planned to be kept
(3) Items that match the regional obligation of USP and its strategic directions
(4) Items where technical cooperation can be expected

[Elimination Principle]
(1) Items that cannot be operated with the existing technology level of USP when ICT centre is operational
(2) Items for which the maintenance personnel (including out-sourcing) are not kept or planned to be kept
(3) Items that doesn't match the regional obligation of USP and its strategic directions
(4) Items that needs the development of large-scale communication infra-structure
(5) Items that can be dealt with the efficient use of the existing items

5. Memorandum of Basic Design Study

MEMORANDUM

10th March, 2005

Through discussions among Fiji Government, the University of the South Pacific (USP) and the Basic Design Study Team, after exchanging Minutes on 15th February, 2005, both parties confirmed the issues concerning the University of the South Pacific Information and Communication Technology Centre as follows:

The Schedule of Consultants of the Basic Design Study Team

Mr. Koike will leave for Tokyo on March 12, as scheduled.

Mr. Hoshiai has already left for Tokyo on Mach 7, as scheduled.

Mr. Yamamoto will leave for Tokyo on March 12, as the schedule is extended.

Mr. Doi has already left for Tokyo on March 8, as the schedule is extended.

Mr. Yamaguchi has already left for Tokyo on February 26, as scheduled.

Confirmed Issues

1. The official name of the buildings :

   University of the South Pacific Information Communication Technology Centre was confirmed to be 'the Japan – Pacific ICT Centre'.

2. The curricula for the estimation of items, numbers and specifications of buildings and equipments :

   The curricula were confirmed as shown in the Annex– 5

3. The requested items and their priorities :

   The items for buildings were confirmed as per Annex – 3, the items for equipment were confirmed as per Annex – 4.

4. Final request on the theatre :

   The large-scale Lecture Theatre hall for 1000 people and the Multipurpose Digital Performing Art Theatre for 500 people were integrated to the Multipurpose Theatre for 300 people. The contents are as described in the article 'F. Final Request on the Multipurpose Theatre' of this Memorandum.

5. The related plan concerning ICT at USP :

When the Basic Design Study Team gave the courtesy visit to Australian High Commission and New Zealand High Commission, it was confirmed there was no particular aid plan for ICT issues for USP for the time being.

6. The undertakings by Fiji Side:

The Fiji Government, the University of the South Pacific and the Basic Design Study Team confirmed the undertakings by both sides when the Minutes was signed. However, the additional undertakings by USP were confirmed as follows:

a) The movement and setting of the existing equipment, including the equipment of the server room of IT services.

b) To secure the temporary storage for the equipment procured from foreign countries.

7. The Land Authority to use :

The 99-years leasing contract (1972 – 2071) was confirmed as per Annex – 6.

Construction Site

1. The construction site was finalized as of the address: Lot 1 & 2 on Plans S. 1500 Laucala Bay. Since the site is the part of the University area, the survey company employed by the Consultants shall drive pegs at every corner of the Site to clarify the construction area.
2. There are some existing buildings and trees in the construction site. USP shall demolish these existing obstacles when the implementation of the building was finally determined. (See the Annex – 1: The demolition Area. For the time being, the 12 buildings such as Sub Electrical Room, Mail building, Registration building, Female Dormitory, former Radio Pacifik station, Male Dormitory A,C,D,E,F and Female Dormitory B, and Purchasing building are planned to be demolished.)
3. The infrastructures, such as fiber cable, telephone line, water supply line, sewerage line, electricity, etc. in this site should be replaced and reconnected to the Japan - Pacific ICT Centre by USP.
4. For the time being, the topographical survey has started on March 4, and the Geological survey is supposed to start on March 10. Mr. Yamamoto will check the progress of both surveys, and the final data will be sent to the Consultants and will be analyzed in Japan.

The Summary of the Project

A. The Objective

The objective of constructing the Japan – Pacific ICT Centre is to mitigate the 'Digital Divide' among the Island Countries, Fiji and 12 countries and areas participating USP Net, by constructing the new facilities and by integrating and enhancing the ICT functions scattered in the campus.

B. Buildings and Their Zoning

The Consultants proposed the building layout plan to USP, in consideration of the circumstance and the figure of the construction site, and the plan was basically concurred by both parties. However, the final location of the new buildings shall be determined after analyzing the result of the topographical and geological survey. The major buildings and room allocation were confirmed as in the attached table. (See Annex – 2 for Layout Plan, Annex – 3 for Room Requirement)

C. Facilities and Air Conditioning

The area of rooms and the necessity of air conditioning should be studied in accordance with USP building standard.

D. Equipment Plan

The principle of requested equipment was not changed from the attached table in the signed Minutes, and the details and the priorities of the requested items are confirmed as shown in the Annex – 4.

E. Estimation of the Components

1. The commonly usable rooms in the requests should be integrated, deleted, in consideration of their usage.
2. The estimation of the components will be finalized by the analysis of obtained data and curricula of USP.
3. The back space, such as electricity, generator and machinery rooms will be studied by the Consultants after they return to Japan.

F. Final Request on the Multipurpose Theatre

1. The capacity of the multi-purpose theatre is approximately 300. The usage of the theatre will be multi-purpose, including theatre arts, video recording and general lectures, etc.

2. The curtain should be horizontally moving type (traveler), not the suspension type.
3. The height of stage floor should be the same as the former seating area, which can be used as the extended area to the main stage.
4. The final specification will be studied and determined by the Consultants, based on the above-mentioned conditions, after they return to Japan

The Attached:
Annex-1: The Construction Site and Demolition Plan of the Existing Obstacles
Annex-2: The Layout Plan of the Buildings
Annex-3: Requested Building Facilities and their Priorities
Annex-4: Requested Equipments and their Priorities
Annex-5: Curricula for the ICT Centre
Annex-6: Leasing Contract of the Land

Mr. Hiroyuki Koike, JIA
Project Manager / Architect
Azusa Sekkei Co.,Ltd.

Prof. Anthony Tarr
Vice Chancellor
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Mr. Joe Natau
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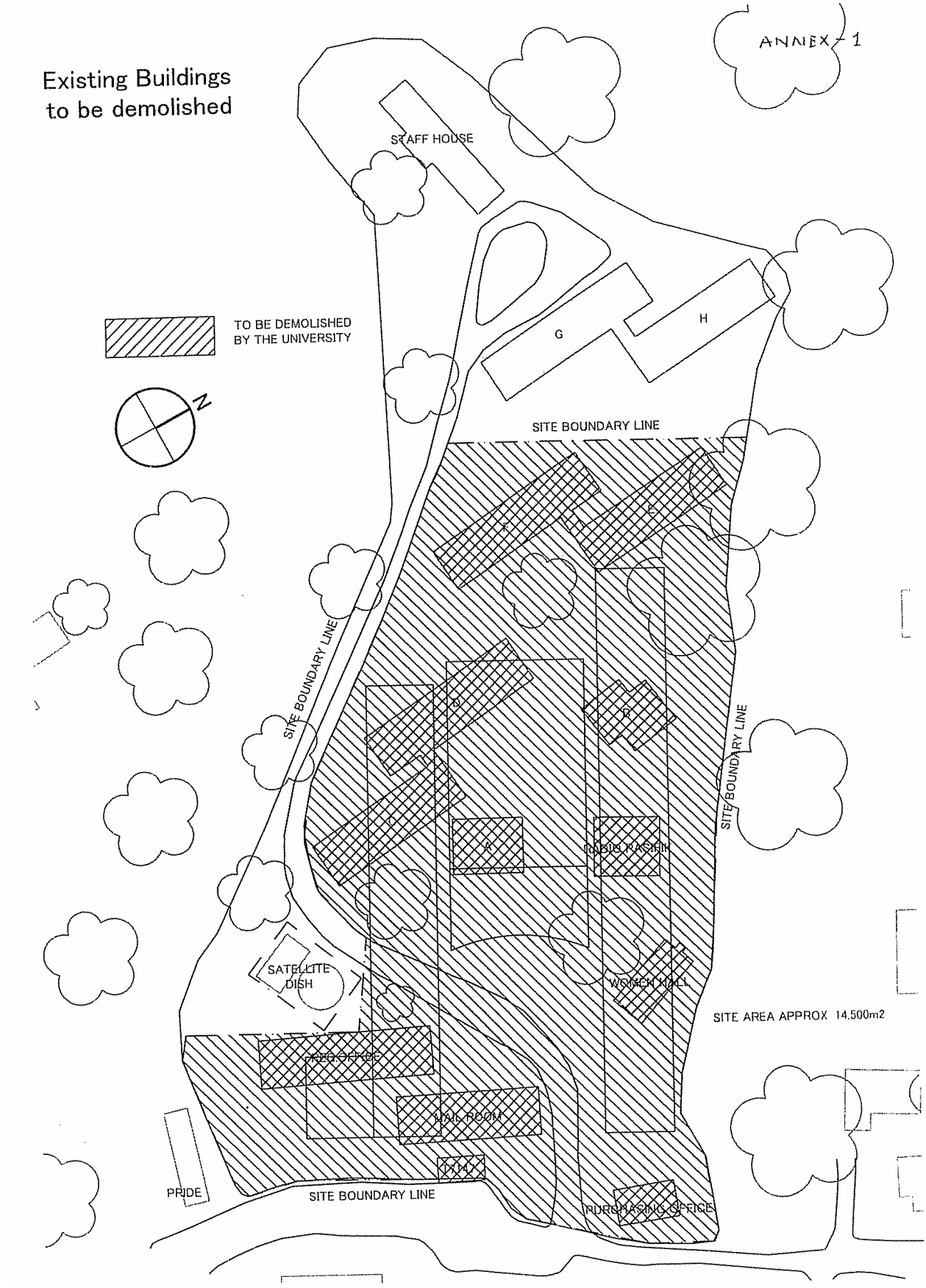
ANNEX - 1
Existing Buildings
to be demolished
STAFF HOUSE
G
H
TO BE DEMOLISHED
BY THE UNIVERSITY
N
SITE BOUNDARY LINE
SITE BOUNDARY LINE
SITE BOUNDARY LINE
A
B
C
D
E
F
RADIO RAKSHIK
SATELLITE
DISH
WOMEN HALL
SITE AREA APPROX 14,500m2
MAIL ROOM
PRIDE
SITE BOUNDARY LINE
PURCHASING OFFICE


ANNEX-2
LODGE
SITE BOUNDARY LINE
SITE BOUNDARY LINE
SITE BOUNDARY LINE
SITE AREA APPROX 14100m²
PROP.
LIBRARY
ADMIN/ACADEMIC
NEW
LECTURE THEATRE
POOL
SOUTHERN
CROSS
SPAS
CAR PARK
LAUCALA BAY ROAD

USP ICT Centre project　　Room priority sheet　　ANNEX-3

Department	Priority of Departments		Room Name	Priority of Rooms	Note
I Common Area	1	1	Multipurpose Theatre	A	
		2	Lecture Hall 4 rooms	C	Utilize existing facilities
		3	Office -Director ICT	A	
		4	Office - Core Staff ICT	A	
		5	Office - Senior Staff	C	
		6	Reception/Secretary	A	
		7	Visiting Staff Office	A	
		8	Tutorial Room	C	Utilize existing facilities
		9	Video Conference Room	A	
		10	Green room	A	
		11	Conference Room	A	
		12	Interaction Room	C	
		13	Staff Common Room with kitchen	A	
		14	ICT Resource Room (CS Library)	B	
		15	Digitization Room	B	
		16	Radio Pasifik' Room	A	
II Computing Science	2	1	Academic Staff Office	A	
		2	Technical Staff Office	A	
		3	Administration Staff Office	A	
		4	Tutor Office	A	
		5	Research Laboratories	A	
		6	Dedicated Networking Teaching Lab	A	
		7	General Access Computer Lab 5 rooms	B	Utilize ITS Laboratory
		8	Dedicated Computer Teaching Lab 4 rooms	A	
		9	Postgraduate Laboratory	A	
		10	Tutorial Seminar Room 10 rooms	C	Utilize existing facilities
		11	Technical Laboratory (Workshop)	A	
III IT Services	3	1	Office - Director ITS	A	
		2	Office - Secretary	A	
		4	General Office	A	
		5	Meeting room	A	
		6	Laboratory A (Professional) 4 rooms	A	
		7	Laboratory B (General Access) 8 rooms	A	
		8	Laboratory C (R&D)	B	
		9	Workshop	A	
		10	Server Room	A	Computer floor
		11	Storage Room	A	
		12	Helpdesk & Waiting Area	A	
		13	Hub Earth Station Staff Room	C	
		14	USP Net Control Room	A	
IV Research, Development and Incubation	4	1	Office - Research / Incubator	A	
		2	Computer Labs Research	C	
		3	Test Bed-1	A	
		4	Test Bed-2	A	
V Engineering	5	1	Office	A	
		2	Techinical staff	A	
		3	Postgraduate Room	B	
		4	Computer lab	A	
		5	Engineering lab 1	A	
		6	Engineering lab 2	B	
		7	Engineering lab 3	A	
		8	Storage 1/Research	A	
		9	Storage 2/Research	B	
VI GIS	6	1	Office - Director	A	
		2	Office - Lecturer & Officers	A	
		3	Postgraduate Room	A	
		4	Geospatial Science Computer Learning Space	A	
		5	25seat general acsess Laboratory	C	Utilize ITS Laboratory
		6	Geospatial Database Server Simulation Lab	B	
		7	10 'Seat' Research Laboratory	A	
		8	Equipment Room	A	
		9	Data Warehouse	A	

Requird Equipment List

Code No.		Description	Priority	Req. Q'ty
COM	1	LCD Projector (L)	A	5
COM	2	LCD Projector (S)	A	7
COM	3	Projection Screen (L)	A	5
COM	4	Projection Screen (S)	A	7
COM	5	PC (Standard Lvel)	A	38
COM	6	PC (High Level)	B	4
COM	7	Printer (Ink-jet)	A	11
COM	8	Printer (All-in-one type)	A	4
COM	9	Printer (Laser type/Monoclom)	A	2
COM	10	Printer (Laser type/Color)	A	1
COM	11	OHC	A	12
COM	12	Lectern	A	6
COM	13	DVD Player	A	5
COM	14	VCR	A	10
COM	15	White Board	A	16
COM	16	TV (29")	A	8
COM	17	Web Cam and Microphone (S)	B	5
COM	18	Web Cam and Microphone (M)	B	5
COM	19	Polycom Codex w/IMUX	A	3
COM	20	Remote Camera (w/Control System)	A	6
COM	21	Wireless Lapel Mic	A	4
COM	22	Microphone	A	1
COM	23	Audio Mixer (8-10ch)	A	8
COM	24	Audio Mixer (Professional)	A	2
COM	25	Power Amplifier	A	16
COM	26	Audio Speaker	A	16
COM	27	Video/CRT Monitor (9")	B	3
COM	28	Video/CRT Monitor (14")	A	10
COM	29	Video Mixer	A	1
COM	30	Mic/Line Mixer	A	1
COM	31	Audio-Video Distribution Amplifier	A	7
COM	32	Scan Converter	A	12
COM	33	VGA Splitter	A	12
COM	34	Fibre Transmitter and Receiver Set	A	5
COM	35	Fibre Driver	A	10
COM	36	Multi-system Converter	A	2
COM	37	Polycom Quad Module	B	12
COM	38	Conference PA System	A	2
COM	39	Conference Table (Special)	A	1
COM	40	Conference Table (General Type)	B	1
COM	41	Table for Resource Center	B	1
COM	42	Chair	B	190
COM	43	Equipment Console	A	1
COM	44	Lighting Position (Overhead Grid)	A	1
COM	45	Lighting Position (Front of House Pipe)	A	1
COM	46	Control System	A	1
COM	47	Circuit Boxe	A	1
COM	48	Portable Dimmer Hook-up	A	1
COM	49	Sound Multi-cable Box for Mic and Line Input	A	1
COM	50	Lighting Board	A	1
COM	51	Digital Dimmer	A	48

Code No		Description	Priority	Req Q'ty
COM	52	Cyclorama	A	1
COM	53	Black Backdrop	A	1
COM	54	Black Side Legs	A	3
COM	55	Black Border	A	3
COM	56	Gold Traveller for Front Curtain	A	1
COM	57	Stage Lighting Instrument	A	53
COM	58	Fresnel w/Barndoors	A	24
COM	59	Variable Forcus Eleipsoidal Spot	A	24
COM	60	Three-compartment Laniro Type Cyclorama Light	A	5
COM	61	Front Projection Screen	A	1
COM	62	Film Projection Screen	A	1
COM	63	Wireless Microphone	A	1
COM	64	Conventional Microphone	A	1
COM	65	Studio Video Camera	A	3
COM	66	Tripod for Studio Camera	A	3
COM	67	Wall-mounted Camera	A	1
COM	68	Intercom Systema	A	1
COM	69	Time-base Corrector	A	1
COM	70	Syncro Generator	A	1
COM	71	Vectorscope	A	1
COM	72	Patch Panel Bay	A	1
COM	73	Headphone	B	2
COM	74	Broadcast Microphone	A	2
COM	75	Dual Cassette Playback Unit	A	1
COM	76	Studio Monitor	A	2
COM	77	Turntable	A	1
COM	78	AM/FM Audio Receiver	A	1
COM	79	CD-DVD Player	A	6
COM	80	Macintosh PC	A	2
COM	81	Console for Audio Mixser	A	1
COM	82	Automated Radio System Software	B	1
COM	83	Remote-broadcast Set-up	A	1
COM	84	Server	A	1
COM	85	Fax Machine	B	1
COM	86	Microwave Oven	C	1
COM	87	Refrigerator	C	1
COM	88	Tea Kettle	C	2
COM	89	Water Cooler/Water Purifier	C	1
COM	90	Microfilm Reader/Scanner	A	4
COM	91	Scanner (Flat Bed Type)	A	3
COM	92	Scanner (Book Scanner Type)	A	1
COM	93	Photocopier	A	2
COM	94	Bock Binding Machine	A	1
COM	95	Ring Binding Machine	A	1
COM	96	Shelves	A	1
COM	97	Various Connector/Cable/Accessories	A	1
CSC	1	Floor-standing Rack for Router/Switching etc.	A	3
CSC	2	Multivendor Platform Router	B	10
CSC	3	Ethernet Switch (48 port)	A	6
CSC	4	Ethernet Switch (24 port)	A	6
CSC	5	Patch Panel (48 port)	A	6
CSC	6	Patch Panel (24 port)	A	6
CSC	7	Wireless Access Point	A	4

Code No		Description	Priority	Req Q'ty
CSC	8	Wireless LAN Card	B	20
CSC	9	Bluetooth	A	10
CSC	10	Ethernet Card	A	40
CSC	11	Handheld Device for Mobile Networking	A	10
CSC	12	Laptop for Mobile Networking	A	6
CSC	13	Cables & others	B	4
CSC	14	Server	C	2
CSC	15	PC for experimental work	A	40
CSC	16	Embedded System Board	A	40
CSC	17	Oscilloscope	A	3
CSC	18	Desktop PC for Teaching Computer Laboratory	A	200
CSC	19	Desktop PC for Staff	B	54
CSC	20	Desktop PC for Research	A	50
CSC	21	PC for Postgraduate Laboratry	A	40
CSC	22	Highend Server	B	3
CSC	23	Laser Printer for Staff	B	7
CSC	24	Laser Printer for Student	A	5
CSC	25	Back up Facilities	A	1
CSC	26	Desk	B	104
CSC	27	Chair	B	104
CSC	28	File Cabinet	B	27
CSC	29	White Board	B	1
ITS	1	Server	A	2
ITS	2	Web Server	A	4
ITS	3	Server	A	24
ITS	4	Tape Backup Archive	A	1
ITS	5	General Purpose Server	A	4
ITS	6	Network Switch	A	2
ITS	7	UPS (L)	A	30
ITS	8	Wev Proxy	B	2
ITS	9	Terminal Server	C	2
ITS	10	Desktop Computer	B	65
ITS	12	Fiber Channel San	C	1
ITS	13	Rack Modem/Access Server	C	1
ITS	14	Monitoring Station	C	6
ITS	15	Desktop Computer for Professional Training Lab.	A	52
ITS	16	Desktop Computer for Development Training Lab.	A	52
ITS	17	Desktop Computer for Research & Development Lab.	B	11
ITS	18	Desktop Computer for General Access Lab.	A	400
ITS	19	Desktop Computer for Disabled Student Lab.	A	5
ITS	20	Printer	A	14
ITS	21	Switch	A	35
ITS	22	Data Projector	A	13
ITS	23	Surveillance Camera	C	30
ITS	24	Surveillance Management System	B	1
ITS	25	Server (w/UPS)	A	5
ITS	26	White Board	B	30
ITS	27	Fibere Optic Cable	A	1
ITS	28	Video Codecs	A	7
ITS	29	Polycom Inberse Multiplexer for View Staition	A	7
ITS	30	Equipment Rack	A	3
ITS	31	Console for Video-broadcast Switching	A	4
ITS	32	PC for Schduler	A	1

Code No		Description	Priority	Req Q'ty
ITS	33	Work Bench	B	1
ITS	34	Video Monitor	A	24
ITS	35	VHS-CD-DVD Combo Redcorder	A	6
ITS	36	Video Mixer	A	4
ITS	37	Mic/Line Mixer	A	1
ITS	38	Fiber Driver	A	6
ITS	39	HDSL Data Termination Unit	A	1
ITS	40	V.35 Data Termination Unit	A	1
ITS	41	Audio-Video Distribution Amplifier (Video)	A	4
ITS	42	Audio-Video Distribution Amplifier (Audio)	A	2
ITS	43	PC for Staff	A	3
ITS	44	Printer for Staff	A	2
ITS	45	Video Broadcast Facility	A	3
ITS	46	Tablet PC	A	4
ITS	47	OHC	A	2
ITS	48	LCD Projector W/Screen	A	4
ITS	49	Desk	B	95
ITS	50	Chair	B	95
ITS	51	File Cabinet	B	27
ITS	52	White Board	B	1
RDI	1	Fax	A	1
RDI	2	PC	A	9
RDI	3	Network Analyzer	A	2
RDI	4	Spectrum Analyzer	A	1
RDI	5	Signal Generator	A	1
RDI	6	Transmitter Receiver	A	1
RDI	7	Digital CRO	A	1
RDI	8	Router	A	2
RDI	9	Photocopy	A	2
RDI	10	PLC Modem	A	1
RDI	11	TPE Transformer Point Equipment	A	1
RDI	12	CPE	A	1
RDI	13	Internet Modem	A	1
RDI	14	Wireless Security Equipment	A	1
RDI	15	SCADA Equipment and Control	A	1
RDI	16	Radio Trunking-Receiver	A	1
RDI	17	Satellite Receiver	A	1
RDI	18	Receiving Dish	A	1
RDI	19	Printer	A	1
RDI	20	Plotter	A	1
RDI	21	Digital Camera	A	1
RDI	22	Mageillan Pro Mobile Robot	B	1
RDI	23	Manufacturing Network	C	1
RDI	24	Servo Robot	C	1
RDI	25	Automate Storage Vision Inspection System	C	1
RDI	26	CNC Machining Center	C	1
RDI	27	CNC Lathe.	C	1
RDI	28	Master Cam	C	1
RDI	29	Server	A	2
RDI	30	Three axis Magnetometer	C	1
RDI	31	Rio Meter	C	1
RDI	32	Desk	B	6
RDI	33	Chair	B	6

Code No		Description	Priority	Req. Q'ty
RDI	34	File Cabinet	B	6
RDI	35	White Board	B	2
ENG	1	Oscilloscope	A	8
ENG	2	Spectrum Analyzer	A	1
ENG	3	Power Sensor	A	1
ENG	4	Vector Signal Generator	A	1
ENG	5	Analog Communications	A	8
ENG	6	Analog Communications Training System	A	8
ENG	7	Fiber Optic Communications	A	3
ENG	8	Antenna Training and Measuring System	A	3
ENG	9	Microwave Technology Training System	A	3
ENG	10	Radar Training System	A	3
ENG	11	Digital Communications 1	A	8
ENG	12	Digital Communications 2	A	8
ENG	13	Digital Communications Training System	A	8
ENG	14	Fiber Optics & Lasers	A	3
ENG	15	GPS -1010 Global Positioning System Trainer	A	3
ENG	16	PCB Etching Machine	A	2
ENG	17	Oscilloscope	A	30
ENG	18	Power Supply	A	30
ENG	19	Signal Generator	A	30
ENG	20	Multimeter	A	30
ENG	21	Soldering Station	A	30
ENG	22	Tool kits	B	30
ENG	23	Digital Scope Meter	B	30
ENG	24	Power Electronics Training Module	A	1
ENG	25	Digital Signal Processing Kit	B	10
ENG	26	Wind Turbine	A	1
ENG	27	Solar Panel	A	5
ENG	28	Power Inverter	A	5
ENG	29	Bread Board	B	30
ENG	30	PIC Microcontroller Development Kit	A	30
ENG	31	Momentum PLC	A	30
ENG	32	Motor Winding Kit	B	5
ENG	33	PC	A	60
ENG	34	Server/Workstation	A	3
ENG	35	Battery Pack	B	5
ENG	36	Automation Unit	A	1
ENG	37	Turning Center	A	2
ENG	38	Milling Center	A	2
ENG	39	PS3 Robot/RC520 PC Controller	A	2
ENG	40	Desktop Robot	A	4
ENG	41	All-Terrain Robot	A	4
ENG	42	Hemisson Education Robot	A	10
ENG	43	KoreBot Robotid Development Board	A	4
ENG	44	Yamabico	A	2
ENG	45	Lab. Table W/Chair	B	30
ENG	46	LCD Projector W/Screen	A	4
ENG	47	Counter Table	B	3
ENG	48	Desk	B	1
ENG	49	Chair	B	1
ENG	50	File Cabinet	B	1
ENG	51	Equipment Rack	B	15

Code No		Description	Priority	Req Q'ty
GIS	1	Desk	A	11
GIS	2	Chair for Teacher	A	49
GIS	3	Dhair for Student	A	30
GIS	4	Computer Desk/Chair	A	15
GIS	5	Bookshelf	A	5
GIS	6	Filing Cabinet	A	14
GIS	7	Low Map Table w/Chair	A	1
GIS	8	Teaching Desk w/Chair	A	1
GIS	9	Dual Screen PC w/Auto-stereo Display & Frat CRT Monnitor	A	26
GIS	10	Audiovisual Console	A	1
GIS	11	Computer Projector	A	2
GIS	12	Projector screen	A	2
GIS	13	White Board (S)	A	45
GIS	14	White Board (L)	A	2
GIS	15	Digitizing Tablet	A	46
GIS	16	Pin up Board	B	14
GIS	17	Long Bench	B	4
GIS	18	Server	B	5
GIS	19	Network System	A	2
GIS	20	Dual Screen Photogrammetric Workstation	A	1
GIS	21	Single Screen Workstation	A	25
GIS	22	Map Cabinet	A	4
GIS	23	Aerial Photograph Cabinet	A	4
GIS	24	Map Table w/Light Table	A	1
GIS	25	Shelves for Equipment	A	2
GIS	26	Digital Aerial Imaging Camera (w/Integrated High Precision GPS)	A	2
GIS	27	Field Spectrometer	A	2
GIS	28	GPS Mobile Mapping System	A	20
GIS	29	Sidescan Sonar	B	1
GIS	30	High Resolution Scanner for Scanning Aerial Photograph and Interpretation Overlays	A	1
GIS	31	Plotter (A0)	B	1
GIS	32	Laminator (A0)	B	1
GIS	33	Colour Laser Printer (A3)	B	1
GIS	34	Colour Map and Plan Scanner (A0)	A	1
GIS	35	Total Station	A	8
GIS	36	Surveying Automatic Level	B	10
GIS	37	Survey Grade GPS Base Station	C	1

Curriculum (Commputer Science : C/S Majors 2006 -)

		1st Semester				2nd Semester			
		Lec.	Tut.	Lab.	Total	Lec.	Tut.	Lab.	Total
Sem I	Introduction to Computing Science	3	1	F (G)	20				-
	Calculus I	3	1	-					
	Probability & Statistics	3	1	-					
	English	3	1	-					
	Minor Course	3	1	-					
Sem II	Data Structures and Algorithms				-	3	1	F (G)	20
	Caluculus II					3	1	-	
	Discrete Mathematics					3	1	-	
	Introduction to Pacific Studies					3	1	-	
	Minor Cource					3	1	-	
Sem III	Data Communications	3	1	F (N)	16				-
	Database Management System (for Computer Science)	3	1	F (S)					
	Software Engineering I	3	1	F (G)					
	Minor Course	3	1	-					
Sem IV	Computer Organization					3	1	F (G)	16
	Design and Analysis of Algorithms					3	1	F (G)	
	Software Engineering II					3	1	F (G)	
	Minor Course					3	1	-	
Sem V	Operating Systems	3	1	F (S)	12				-
	Two from following Electives	6	2	F (G/S)					
	Elective								
	Artificial Inteligence	3	1	F (G)					
	Multimedia System	3	1	F (S)					
	Digital Image Processing	3	1	F (S)					
	Topics in Computer Science	3	1	F (G)					
	Good Governance	3	1	-					
Sem VI	Computer Networks				-	3	1	F (N)	12
	Two from following Electives					6	2	F (S/G/N)	
	Elective								
	Internet Computing					3	1	F (S)	
	Principles of Programming Languages					3	1	F (G)	
	Theory & Practice of Compilers					3	1	F (G)	
	Human Computer Interaction					3	1	F (G)	
	Security					3	1	F (N)	
	Computer Project					3	1	F (G)	
	Topics in Computer Science					3	1	F (S)	
Total		51	17	-	48	57	19	-	48

Curriculum (Commputer Science : Information System Majors 2006 -)

		1st Semester				2nd Semester			
		Lec.	Tut.	Lab.	Total	Lec.	Tut.	Lab.	Total
Sem I	Information Systems I	3	1	F (G)	12				-
	English	3	1	-					
	Minor Course	3	1	-					
Sem II	Information System II				-	3	1	F (G)	12
	Introduction to Pacific Studies					3	1	-	
	Minor Cource					3	1	-	
Sem III	Distributede Information System Theory and Application	3	1	F (S)	12				-
	Database Management System (for Information System)	3	1	F (S)					
	Minor Course	3	1	-					
Sem IV	Advanced Database Systems				-	3	1	F (S)	8
	Minor Course					3	1	-	
Sem V	Information Systems Analysis & Design	3	1	F (G)	12				-
	Data Mining	3	1	F (S)					
	Good Governance	3	1	-					
Sem VI	Advanced Distributed System & Information Systems Networking				-	3	1	F (S)	8
	Topics in Computer Science					3	1	F (S)	
Total		27	9	-	24	21	7		28

Curriculum (Electrical/Electronics 2006 -)

		1st Sem.				2nd Sem			
		Lec.	Tut.	Lab.	Total	Lec.	Tut.	Lab.	Total
Sem. I	Engineering Mechanics	1	3	3 (O)	24				-
	Engineering Graphics	1	3	3 (P)					
	English for Academic Purpose	1	4	-					
	Mathematics I	1	4	-					
Sem. II	Electrical Engineering Science				-	1	3	3 (NL)	26
	Material Science					1	3	3 (O)	
	Computing for Science & Engineering					1	3	3 (P)	
	Mathematics II					1	4	-	
Sem. III	Mathematics III	1	4	-	24				-
	Pacific Studies	1	4	-					
	Circuits & Systems	1	3	3 (NR)					
	Fundamentals of Communication Engineering	1	3	3 (NC)					
Sem. IV	Mathematics IV				-	1	4	-	26
	Computer Organization					1	3	3 (P)	
	Measurement & Instrumentation					1	3	3 (NR)	
	Digital Electronics					1	3	3 (NR)	
Sem. V	Microprocessor Applications	1	3	3 (NR)	28				-
	Control Engineering	1	3	3 (NL)					
	Analog Electronics	1	3	3 (NR)					
	Power & Machines	1	3	3 (NL)					
Sem. VI	Design/Build/Test/Project				-	1	3	3 (N/O)	26
	Power Electronics					1	3	3 (O)	
	Communication Networks					1	3	3 (NC)	
	Ethics & Governance					1	4	-	
Sem. VII	Engineering Project I	-	-	3 (NR)	24				-
	Digital Signal Processing	1	3	3 (P/N)					
	Electrical Engineering Systems	1	3	3 (NL)					
	Elective (any 1 from I/II)	1	3	3 (NR)					
Sem. VIII	Engineering Project II				-	-	-	3 (N/O)	22
	Renewable Energy					1	3	3 (O)	
	Engineering Business Studies					1	4	-	
	Elective (any 1 from I/II)					1	3	3 (N)	
Total		15	49	36 (30)	100	15	49	36 (21)	100
Electives I	Automated Systems	1	3	3 (NL)		1	3	3 (N)	
	Robotics	1	3	3 (NM)		1	3	3 (N)	
	Electrical Power Systems	1	3	3 (NL)		1	3	3 (N)	
Elective II	Analog Electronic System Design	1	3	3 (NR)		1	3	3 (N)	
	Digital Electronic System Design	1	3	3 (NR)		1	3	3 (N)	
	Electronic Manufacturing	1	3	3 (NR)		1	3	3 (N)	

(O) : Existing Laboratory
(P) : PC Laboratory
(NR) : New (Electronic) Laboratory
(NL) : New (Electric) Laboratory
(NC) : New (Communication) Laboratory
(NM) : New (Mechatronics) Laoratory

Curriculum (Communications 2006 -)

		1st Sem.				2nd Sem.			
		Lec.	Tut.	Lab.	Total	Lec.	Tut.	Lab.	Total
Sem. I	Engineering Mechanics	1	3	3 (O)	24				-
	Engineering Graphics	1	3	3 (P)					
	English for Academic Purpose	1	4	-					
	Mathematics I	1	4	-					
Sem. II	Electrical Engineering Science				-	1	3	3 (NL)	26
	Material Science					1	3	3 (O)	
	Computing for Science & Engineering					1	3	3 (P)	
	Mathematics II					1	4	-	
Sem. III	Mathematics III	1	4	-	24				-
	Pacific Studies	1	4	-					
	Circuits & Systems	1	3	3 (NR)					
	Fundamentals of Communication Engineering	1	3	3 (NC)					
Sem. IV	Mathematics IV				-	1	4	-	26
	Computer Organization					1	3	3 (P)	
	Data Communication					1	3	3 (P)	
	Signals and Systems					1	3	3 (P/NR)	
Sem. V	Microprocessor Applications	1	3	3 (NR)	28				-
	Internet Computing	1	3	3 (P)					
	Analog Electronics	1	3	3 (NR)					
	Network Security	1	3	3 (P)					
Sem. VI	RF & Photonics				-	1	3	3 (P/NR)	26
	Multimedia Communication					1	3	3 (P)	
	Teletraffic					1	3	3 (P)	
	Ethics & Governance					1	4	-	
Sem. VII	Engineering Project I	-	-	3 (P/NC)	24				-
	Digital Signal Processing	1	3	3 (P/NR)					
	Satellite Communications	1	3	3 (P/NC)					
	Elective (any 1 from I/II)	1	3	3 (P/N)					
Sem. VIII	Engineering Project II				-	-	-	3 (P/NC)	22
	Wireless Communication					1	3	3 (P/NC)	
	Engineering Business Studies					1	4	-	
	Elective (any 1 from I/II)					1	3	3 (P/N)	
Total		15	49	36 (24)	100	15	49	36 (18)	100
Electives I	Microwave Circuit Design	1	3	3 (P/NC)		1	3	3 (P/NC)	
	Advanced DSP	1	3	3 (P/NR)		1	3	3 (P/NR)	
	Control Theory	1	3	3 (P/NL)		1	3	3 (P/NL)	
Elective II	Embedded Systems	1	3	3 (P/NR)		1	3	3 (P/NR)	
	Communication Networks	1	3	3 (P/NC)		1	3	3 (P/NC)	
	Microprocessor Based Systems	1	3	3 (P/NR)		1	3	3 (P/NR)	

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Curriculum (Mechatronics 2006 -)

		1st Sem.				2nd Sem.			
		Lec.	Tut.	Lab.	Total	Lec.	Tut.	Lab.	Total
Sem. I	Engineering Mechanics	1	3	3 (O)	24				-
	Engineering Graphics	1	3	3 (P)					
	English for Academic Purpose	1	4	-					
	Mathematics I	1	4	-					
Sem. II	Electrical Engineering Science				-	1	3	3 (NL)	26
	Material Science					1	3	3 (O)	
	Computing for Science & Engineering					1	3	3 (P)	
	Mathematics II					1	4	-	
Sem. III	Mathematics III	1	4	-	24				-
	Pacific Studies	1	4	-					
	Circuits & Systems	1	3	3 (NR)					
	Solid Mechanics	1	3	3 (O)					
Sem. IV	Mathematics IV				-	1	4	-	26
	Thermofluids					1	3	3 (O)	
	Measurement & Instrumentation					1	3	3 (NR)	
	Digital Electronics					1	3	3 (NR)	
Sem. V	Microprocessor Applications	1	3	3 (NR)	28				-
	Control Engineering	1	3	3 (NM)					
	Analog Electronics	1	3	3 (NR)					
	Applied Thermofluids	1	3	3 (O)					
Sem. VI	Mechatronics Design & Devices				-	1	3	3 (NM)	26
	Dynamics					1	3	3 (O)	
	Communication Networks					1	3	3 (NC)	
	Ethics & Governance					1	4	-	
Sem. VII	Engineering Project I	-	-	3 (NM)	24				-
	Digital Signal Processing	1	3	3 (NR)					
	Advanced Dynamics & Control	1	3	3 (NM)					
	Elective (any 1 from I/II)	1	3	3 (NM)					
Sem. VIII	Engineering Project II				-	-	-	3 (NM)	22
	Robotics & Automation					1	3	3 (NM)	
	Engineering Business Studies					1	4	-	
	Elective (any 1 from I/II)					1	3	3 (NM)	
Total		15	49	36 (21)	100	15	49	36 (21)	100
Electives I	Systems Modeling	1	3	3 (NM)		1	3	3 (NM)	
	Robot & Computational Mechanics	1	3	3 (NM)		1	3	3 (NM)	
Elective II	Process Control Systems	1	3	3 (NM)		1	3	3 (NM)	
	Industrial Automation	1	3	3 (NM)		1	3	3 (NM)	

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Curriculum (Bachelor of Geospatial Scinence 2006 -)

		1st Sem.				2nd Sem.			
		Lec.	Tut.	Lab.	Total	Lec.	Tut.	Lab.	Total
Sem. I	Itroduction to Geospatial Science	2	-	2 (S)	18				-
	Information Systems	4	1	1 (G)					
	English for Academic Purposes	2	2	-					
	Chosen specialty Area	2	-	2 (G)					
Sem. II	Geomatics I				-	2	-	4 (S)	23
	Information Systems II					4	1	1 (G)	
	Survey Computations I					2	-	4 (S)	
	One option from following					4	1	-	
	Options								
	Calculus and Linear Algebra					4	1	-	
	Basic Statistics					4	1	-	
Sem. III	GIS - Desktop GIS	2	-	2 (S)	18				-
	Database Systems	4	1	1 (G)					
	Geomatics II	2	-	2 (G)					
	One option from following	2	-	2 (G)					
	Survey Computations II	2	1	1 (G)					
	Chosen specialty Area	2	-	2 (G)					
Sem. IV	GIS - Earth Imaging Technology and Application				-	2	-	2 (S)	17
	Adv. Database Systems and Web Database Tech.					3	1	1 (G)	
	Pacific Studies					2	2	-	
	Chosen specialty Area					2	-	2 (G)	
Sem. V	GIS - Advanced Spatial Information Systems	-	-	4 (S)	17				-
	Information Systems Analysis and Design	3	1	1 (G)					
	Digital Image Processing	-	-	4 (S)					
	Chosen specialty Area	2	-	2 (G)					
Sem. VI	GIS - Spatial Analysis				-	-	-	4 (S)	16
	Good Governance					2	2	-	
	Two options from following					2	-	6 (S/G)	
	Options								
	GIS - Ground Investigations					-	-	4 (S)	
	GIS - Project or Special Topic					-	-	4 (S)	
	Chosen specialty Area					2	-	2 (G)	
Sem. VII	Honours Research Project	-	-	4 (G)	16				-
	Honours Research Project	-	-	4 (G)					
	Digital Image Processing	-	-	4 (S)					
	Chosen specialty Area	2	-	2 (G)					
Sem. VIII	Honours Research Project				-	-	-	4 (G)	16
	Honours Research Project					-	-	4 (G)	
	Visualisation and Multimedia Cartography					2	-	2 (S)	
	GIS - Ground Investigations					-	-	4 (S)	
Total		27	5	37	69	27	7	38	72

Curriculum (Graduate Diploma in GIS 2006 -)

Sem. I	GIS - Advanced Spatial Information Systems	-	-	4 (S)	8				-
	Digital Image Processing	-	-	4 (S)					
Sem. II	GIS - Ground Investigations				-	-	-	4 (S)	16
	GIS - Adpplied Research Project					-	-	4 (S)	
	Photogrammetry					2	-	2 (S)	
	GIS - Visualisation and Multimedia Cartography					2	-	2 (S)	
Total		0	0	8	8	4	0	12	16

ANNEX- 6

66214

LD.4/16/4997

CARD NO. 1/397

STAMP DUTY

FIJI FIFTY CENTS

COMMISSIONER OF STAMP DUTIES

00 Stamp Duty paid vide
546 353 of 18.11.80

Director of Lands

Crown Lease No. ~~6164~~ 6165

(FOR TITLES OFFICE USE ONLY)

CROWN LAND WITHOUT TITLE

FEES

	$ c
Registration Fee	2. 00
Drawing Fee	25. 00
Plan Fee	13. 00
Survey Fee	829. 65
Total	$869. 65
Revenue Receipt No.	409775
Date	18 8 80
Initials	

THE DIRECTOR OF LANDS
(hereinafter referred to as "Lessor")
of Fiji on behalf of the Crown

hereby leases to THE UNIVERSITY OF THE SOUTH PACIFIC, a body corporate duly constituted by Royal Charter and Warrant (hereinafter referred to as "Lessee")

All that piece of Land being

	Name of Land	Tikina	Province	Area A.	R.	P.
	Lots 1 & 2 on Plan S.1500 Laucala Bay	Suva	Rewa	172	0	20

the boundaries of which are more particularly delineated on the plan hereon and coloured yellow to be held by the said THE UNIVERSITY OF THE SOUTH PACIFIC

as tenant for the term of ninety-nine (99) years commencing on the fifth day of May , 1972 at the yearly rental of two dollars ($2.00) payable to The Director of Lands, Suva

as follows: that is to say,—By two equal half-yearly payments in advance in the months of January and July in every year. Subject to the covenants and powers implied in leases under "Land Transfer Act, 1971" and subject also to the following covenants and provisos; that is to say,—

It is expressly declared that this lease is a Protected Lease under the provisions of the Crown Lands ~~Ordinance~~ Act

And the Lessor hereby reserves all Precious Metals, Coals and Minerals of every description including Crude Oil upon or under the said lands with full liberty at all times to search, dig for and carry away such Metals, Coals and Minerals of every description including Crude Oil and for that purpose to enter upon the said lands or any part thereof.

This lease is subject also to the following covenants and provides; that is to say,—

1. The rent shall be subject to reassessment in the years 1997, 2022 and 2047 to a maximum not exceeding six (6) per centum of the unimproved value of the land.

2. The lessee shall not transfer, sublet, mortgage, assign or part with possession of the demised land or any part thereof without the written consent of the lessor first had and obtained. Notwithstanding the foregoing the lessee may sublet buildings and part thereof for purposes connected with the University without references to the lessor.

3. The lessee shall bear, pay and discharge all rates, taxes, assessments, duties, impositions and outgoings whatsoever which may be imposed or charged now or in the future upon the demised land or dwelling houses or outbuildings to be erected thereon or upon the owner or occupier in respect thereof landlord's property tax only be excepted.

4. The lessee shall maintain and keep in good repair and tenantable condition, to the reasonable satisfaction of the lessor, all buildings erected upon the demised land.

is the Exhibit marked A and referred to
ie Affidavit of WATISONI SERUVATCI
n before me this 24th day of April 2002
Sgd Ifamu Saumaivera
A COMMISSIONER FOR OATHS

WN LEASE No 6165
STERED 8 DEC 1980 at 3.30pm
TITLE
Registrar of Titles
Registrar of Titles

5. The lessee shall not use or permit to be used the demised land or any part ther or the buildings and improvements and dwelling-house or accessory out-buildings to be erected thereon other than for the said purposes set out in the University Charte and Statutes or for any trade, business occupation or calling whatsoever other than for the supply of reasonable auxiliary services to the staff and students of the University, to their dependent households and to official visitors to or guests of the lessee; and no act matter or thing whatsoever shall during the term of this lease be done in or upon the said land or buildings or any part thereof which shall or may be or grow to the annoyance, nuisance, grievance, damage or disturbance of the occupier, lessee or owner of the adjoining lands and properties.

6. The lessee shall keep the demised land clear of all refuse, rubbish, weeds and unsightly undergrowth to the reasonable satisfaction of the lessor, and will keep trimmed the grassed area of the site.

7. It is hereby expressly agreed that this lease is not subject to conditions set out in Regulations 30, (d), (f) and (g) of the Crown Lands (Leases and Licences) Regulations Cap. 113.

8. Any dispute between the parties hereunder shall be referred to arbitration in the manner provided for the settlement of disputes upon a reassessment of rent by Regulation 19 of the said Crown Lands (Leases and Licences) Regulations.

9. Notwithstanding the provisions of the preceding covenant any buildings erected on the demised land shall be removable by the lessee within three months before or after the expiration of the lease; provided that:-

(i) before the removal of any building the lessee shall have paid all rent owing by it and shall have performed or satisfied all its other obligations to the lessor in respect of the demised land;

(ii) in the removal of any building the lessee shall not do any avoidable damage to any other building or any part of the demised land;

(iii) the lessee gives a written undertaking or enters into a Bond to the satisfaction of the lessor that immediately after the removal of any building the lessee shall make good all damage occasioned to any other building or to the demised land and shall remove all concrete or other structures, posts, piles, blocks and clear away all refuse and rubbish and leave the land in clean and tidy condition to the satisfaction of the lessor;

(iv) the lessee shall not remove any building without giving one month's previous notice in writing to the lessor of its intention to remove it;

(v) at any time before the expiration of the notice of removal the lessor, by notice in writing given by him to the lessee, may elect to purchase any building comprised in the notice of removal and any building thus elected to be purchased shall be left by the lessee and shall become the property of the lessor who shall pay to the lessee the fair value thereof to an incoming lessee of the land; and any difference as to the value shall be settled by arbitration in the manner provided by Regulation 19 of the Crown Lands (Leases and Licences) Regulations.

10. The Lessee agrees that the Lessor or any authorised person or persons may a any time without let or hindrance enter upon the demised land to construct, pla or maintain, posts, pipes, cables or wires and drains of any nature whatsoever above or below the ground anywhere within the demised land.

8 DEC 1980

REGISTRAR OF TITLES

6. Minutes of Discussions of Draft report explanation

MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY ON THE PROJECT
FOR
THE CONSTRUCTION OF THE UNIVERSITY OF THE SOUTH PACIFIC INFORMATION AND COMMUNICATION TECHNOLOGY CENTRE IN THE REPUBULIC OF THE FIJI ISLANDS
(EXPLANATION ON DRAFT REPORT)

In February 2005, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study Team on the Project for the Construction of the University of the South Pacific Information and Communication Technology Centre (hereinafter referred to as "the Project") to the Republic of the Fiji Islands (hereinafter referred to as "Fiji"), and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

In order to explain and to consult Fiji on the components of the draft report, JICA sent to Fiji the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed Mr. Osamu Makino, Senior Advisor, JICA Regional Support Office for Oceania, from August 15 to August 27, 2005. As a result of discussions, both parties confirmed the main items described on the attached sheets.

Suva, August 24, 2005

Mr. Osamu Makino
Leader
Basic Design Study Team
Japan International Cooperation Agency

Professor Anthony Tarr
Vice Chancellor
University of the South Pacific

Mrs. Alumita Taganesia
Chief Executive Officer
Ministry of Education
Republic of the Fiji Islands

1

ATTACHMENT

1. Components of the Draft Report

Fiji side agreed and accepted in principle the components of the draft report explained by the Team. The items covered by the Project are listed in Annex-1.

(1) The facilities are listed in Annex-1-1.
(2) The equipment is listed in Annex-1-2.

2. Japan's Grant Aid scheme

Fiji side understands Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Fiji as explained by the Team and described in Annex-4 and Annex-5 of the Minutes of Discussions signed by both parties on February 15, 2005.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of Fiji by November, 2005.

4. Items requested by USP

USP requested the following matters and the team agreed to take into consideration. However the Government of Japan will decide whether the items should be included into the project based on the result consideration.

(1) To provide a Digitization area and equipment in ICT resource room.
(2) To install some barriers such as doors and glass screen so that the academic staff, visiting staff and core staff rooms on the 3rd floor in A wing can be kept quiet from students noise of General access Laboratories on the same floor .
(3) To ensure compliance with Fiji's newly passed Occupational Health and Safety Laws, such as the inclusion of ramps for disabled access.
(4) To provide toilets for teaching staff.
(5) To consider the following Minor revisions.
    ① Pacific Themes as reflected in rooflines, building materials, as well as internal and external motifs.
    ② Harmony with the native environment-organic.
    ③ Promotion of overall sense of "openness".
    ④ Places for students to congregate, sit, and talk without disturbing other functions of the Centre.

5. The items or works to be borne by USP

a) To demolish existing buildings

There are some existing buildings on the Project site. USP agreed to demolish the existing buildings prior to the commencement of constructing the Japan-Pacific ICT Centre.

b) To clear, and reclaim the site

There are some facilities and trees in the Project site. USP agreed to clear and reclaim (if necessary), the site prior to the commencement of constructing the Japan–Pacific ICT Centre.

c) To move the power receiving station

There is an existing power receiving and generator station in the Project site. USP agreed to move the existing station to a suitable place on the Project site and to relocate it cover the demand for the Japan-Pacific ICT Centre.

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d) To move the water tanks and containers.

There are an existing water tanks and containers in the Project site. USP agreed to move them to a suitable place out of the Project site.

e) Exterior construction (Landscape, Planting and Parking lot)

USP agreed to suitably landscape the project site and to construct the parking lot for the Japan-Pacific ICT Centre.

f) Equipment

USP agreed to provide the equipment requested but not included in the Project.

g) Furniture

USP agreed to provide the general furniture and the special furniture requested but not included in the Project.

h) Theatre equipment

There is special theatre equipment to be designed for the Multi-Purpose Theatre. Both sides agreed that Japanese side would include the equipment necessary for lectures. USP side agreed to provide the equipment for multi-purpose uses (like theatre and international conference facilities).

i) Network cabling in the Japan-Pacific ICT Centre

Both sides agreed that Japanese side would set up cabling channels and USP would install computer and audio-visual network cabling in the Japan-Pacific ICT Centre.

j) Telephone work

Both sides agreed that Japanese side would include the telephone piping work and USP would provide telephones, cabling and connecting works.

k) Existing equipment and furniture for the Japan-Pacific ICT Centre

USP agreed to move and set up necessary existing equipment and furniture in the Japan-Pacific ICT Centre.

6. Counterpart Training

USP requested the Team to arrange counterpart training in Japan on University ICT Centre Management under a technical cooperation agreement with JICA. Fiji side understood that an official request for the counterpart training should be submitted to the Japanese side through the Embassy of Japan by the end of August.

7. Technical Cooperation

Fiji side has made a request for a technical cooperation project to assist in activities at the Japan-Pacific ICT Centre, to the Government of Japan. The project purposes are staff development of the Centre and technical support for education, training, and Research and Development, in the ICT fields for the Pacific region. USP would like the Government of Japan to accept the proposal to be implemented from fiscal year 2006. USP considers that the project will be essential for the operation, maintenance and development of the Centre due to a difficulty in current staff situations. In response, the Team promised to convey the proposal to the Government of Japan.

8. Confidentiality

Both sides agreed that the draft report shall be confidential, be dealt with carefully and not be disclosed to any other parties.

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Annex-1 Items covered by the Project

1-1 The items covered by the Project (Facilities)

Table 1 Rooms covered by the Project

	Department	Room Name	Room(s)	Number of Student	Number of staff
I	Common Area	Multipurpose Theatre	1	300	
		Office -Director ICT	1		1
		Office - Core Staff ICT	3		3
		Reception/Secretary	1		2
		Visiting Staff Office	3		3
		Video Conference Room	1	50	
		Conference Room (50 Parson)	1		
		Staff Common Room with kitchen	2		
		ICT Resource Room (with Digitization area)	1		
		Radio Pasifik' Room	1	17	
		Sub Total		367	9
II	Computing Science	Academic Staff Office	18		18 (18x1p)
		Technical Staff Office	1		2
		Administration Staff Office	1		2
		Tutor Office	8		16 (8x2p)
		Research Laboratory	5	25 (5x5p)	
		Dedicated Networking Teaching Lab		40	
		Dedicated Computer Teaching Lab	4	160 (4X40p)	
		Postgraduate Laboratory	1	24	
		Technical Laboratory (Workshop)	1		
		Sub Total		249	38
III	IT Services	Office - Director ITS	1		1
		Office - Secretary	1		1
		General Office	1		20
		Meeting room (10 parson)	1		
		Laboratory A (Professional)	1	25	
		Laboratory A (Development)	1	25	
		Laboratory B (General Access)	2	120 (2x60p)	
		Workshop(Computer)	1		2
		Server Room	1		
		Storage Room	1		
		Helpdesk & Waiting Area	1		3
		USP Net Control Room	1		
		Sub Total		170	27
IV	Research, Development and Incubation	Office - Research / Incubator	3		
		Test Bed /Incubator	1		
		Sub Total			

V	Engineering	Office	1		1
		Technical staff	1		2
		Postgraduate Room	1	4	
		Computer lab	1	12	
		Engineering lab 1	1	30	
		Storage 1/Research	1		
		Sub Total		46	3
		Total		832	78
VI	Others	Toilets, Corridor			
		Foyer			
		Machine room			

Table 2 Theatre setting s covered by the Project

No	Name	Intended use	Stage Settings Specifications	Construction category
1	House draw curtain (black background)	Used to open and close the stage (and as a scene-change curtain for dramas)	22 m wide, approximately 7.5 m high, black background, electrical motor-driven type	Included in the scope of this project
2	Teasers	Curtains hung from the upper part of the stage to cover the stage flyings from the sight of the audience.	22 m wide, approximately 1.5 high, black background, hand-driven type	Included in the scope of this project
3	Curtains at the wings	Curtains hung from the right and the left sides of the stage to cover broadcasters and tools on the stage from the sight of the audience.	3 m wide, approximately 8 high, black background, hand-driven type	Included in the scope of this project
4	Suspension light	Hung from the pipe batten, chiefly to provide lighting effects on the stage.	650W Fresnel lens spotlight, hand-driven type	Only installation of three pipe battens will be included in the scope of this project
5	Projection screen	A curtain on which an images are projected during lectures.	300-inch white background curtain exclusively for image projection, electrical motor-driven type	Included in the scope of this project
6	Cyclorama	An effect curtain fixed at the innermost section of the stage to project images such as backgrounds	20 m wide, approximately 6.5 high, white background, electrical motor-driven type	Included in the scope of this project
7	Ceiling light	Lighting effect equipment illuminating the stage from the upper part of the audience	1KW plane-convex lens spotlight	Included in the scope of this project
8	Gridiron	A work platform to hang curtains, lightings, and so on over the stage	Pulleys and cables will be placed on H-section steels arranged in the shape of lattice	Included in the scope of this project

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1-2 The items covered by the Project (Equipment)

Table 3 Equipment covered by the Project

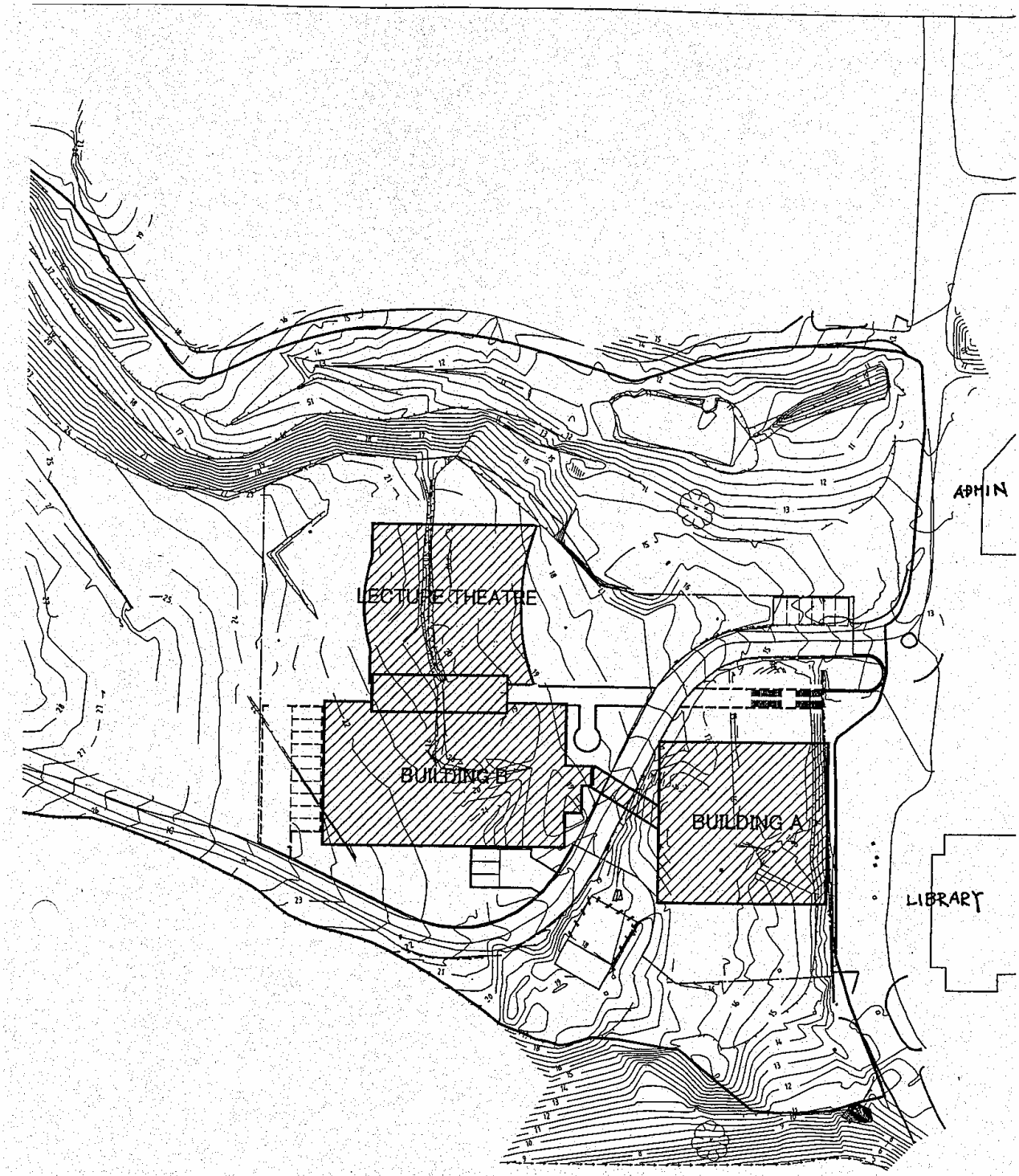
Planed Equipment List

Code No.	Description	Q'ty
COM-1	LCD Projector (L)	1 unit
COM-2	LCD Projector (S) /w Screen	2 units
COM-5-1	PC (Desktop type)	1 unit
COM-5-2	Desk & Chair for PC	1 set
COM-5-3	PC (Laptop type)	3 units
COM-11	OHC	3 units
COM-13	DVD Player	1 unit
COM-14	VCR	2 units
COM-15	White Board	3 units
COM-16	TV	1 unit
COM-20	Remote Camera (w/Control System)	1 set
COM-26	Audio Speaker	2 sets
COM-100	Audio Control System for Multipurpose Theater	1 set
COM-101	Video Control System for Multipurpose Theater	1 set
COM-102	A/V Control System for Video Conference Room	1 set
COM-104	A/V Control System for Conference Room	1 set
CSC-1	Server w/Rack	1 set
CSC-4	Switching HUB	1 set
CSC-6	Patch Panel	1 set
CSC-10	Ethernet Card	40 pcs
CSC-15-1	PC (Desktop type)	150 units
CSC-15-2	Desk & Chair for PC	150 sets
CSC-16	Embedded System Board	4 sets
CSC-17	Oscilloscope	2 units
CSC-24	Printer	2 units
ITS-1	Server (High Level)	6 units
ITS-3	Server (General Level)	14 units
ITS-4	Tape Backup Archive	1 unit
ITS-6	Switching HUB	1 set
ITS-7	UPS	1 set
ITS-15-1	PC (Desktop type)	120 units
ITS-15-2	Desk & Chair for PC	120 sets
ITS-20	Printer	2 units
ITS-22	LCD Projector (S) /w Screen	2 sets
ITS-30	Equipment Rack	1 set
ITS-32-1	PC (Desktop type for Scheduler)	1 unit
ITS-32-2	Desk & Chair for PC	1 set
ITS-33	Work Bench w/Chair	1 set
ITS-35	VCR/CD-DVD Combo Recorder	2 units

ITS-60	A/V System for UPS Net Control Room	1 set
ENG-5	Analog Communications	1 set
ENG-6	Analog Communications Training System	1 set
ENG-7	Fiber Optic Communications	1 set
ENG-8	Antenna Training and Measuring System	1 set
ENG-9	Microwave Technology Training System	1 set
ENG-11	Digital Communications 1	1 set
ENG-12	Digital Communications 2	1 set
ENG-13	Digital Communications Training System	1 set
ENG-17	Oscilloscope	10 units
ENG-18	Power Supply	10 units
ENG-19	Signal Generator	10 units
ENG-20	Multimeter	10 units
ENG-21	Soldering Station	10 sets
ENG-22	Tool kits	10 sets
ENG-29	Bread Board Set	10 sets
ENG-33-1	PC (Desktop type)	15 units
ENG-33-2	Desk & Chair for PC	15 sets
ENG-34	Server w/Rack	1 set
ENG-45	Lab. Table w/Chair	10 sets
ENG-46	LCD Projector (S) /w Screen	2 sets

Additional Requested Equipment List

Code No.	Description	Q'ty
COM-105	PC (Desktop type)	1 unit
COM-106	Microfilm/Microfiche Scanner	1 unit
COM-107	Flat-bed Scanner	1 unit
COM-108	Digital Photocopier	1 unit
COM-109	Book Scanner	1 unit



The University of the South Pacific
Information and Communication Technology Center

Layout Plan S=1/1000

7. Memorandum of Draft Report Explanation

The Project for the construction of the University of the South Pacific
Information and Communication Technology Centre

MEMORANDUM
of
the technical items on the draft report

31st August, 2005

Through discussions between the Fiji Government, the University of the South Pacific (herein after called USP), and the Basic Design Study Team, after exchanging Minutes on 24th August 2005, both parties confirmed additional issues concerning the University of the South Pacific Information and Communication Technology Centre as follows:

1. The Schedule of Consultants of the Basic Design Study Team

Mr. Yamamoto and Mr. Doi left for Tokyo on 27th August on schedule. Mr. Koike and Hoshiai extended their stay and will leave for Tokyo on September 1.

2. Confirmed Issues

A) General

All parties agree that the total Japanese side project cost will not exceed the total submitted in the Draft Basic Design study.

(1) Pacific Design Themes

To respect Pacific architectural designs, the consultant will include Pacific concepts such as organic elements and openness as follows:

a) Make provision on the first floor eaves of the Building-A for planting.

b) The external walls of all buildings to be finished primarily with concrete or plaster. USP understands the necessary annual maintenance that will be required.

c) Expand the depth of the eaves in front of the Theatre and make steps suitable for sitting. Consider making these eaves and porch convex rather than concave to reflect Pacific architectural curves.

d) Represent Oceania designs on the columns, eaves, and wall on the eastern side of the Theatre with USP's collaboration. Oceania designs will also be incorporated on the other external concrete walls of the Theatre.

e) Expand foyer space between the Theatre and Building-B.

f) Collaborate with USP on potential landscape designs to integrate the structures into the surroundings.

(2) Roof design

The consultant agree to consider introducing a significant pitched roof design element to the roofline of Buildings A and B. Design solutions will be discussed with, and approved by, USP prior to finalization. USP understands that some accommodations are required for external equipment but this equipment will be screened from direct view.

(3) Stairs in Building-A

Additional stairs shall be incorporated in Building-A to improve safety.

B) Construction site

(1) Bench Marks

We confirmed that three existing bench marks in the construction area shall be kept carefully by construction commencement.

(2) New road

In case USP intends to make a new road that approaches to the south side of construction site, USP shall provide the detailed drawing with levels of new road by January 2006.

C) Demarcation of works

(1) Power receiving

USP shall replace existing FEA's power station to suitable place outside of construction area before construction commencement, and ensure provision of enough power to the new ICT centre.

(2) Water supply

Water supply shall be connected at the machine room in the first floor of Building A at USP's expense. Meter shall be installed by USP if necessary.

(3) Waste water

Waste water to the ICT centre shall be connected at USP's expense.

(4) Hydrant stand

If required, replacement of the external hydrant stands shall be at USP expense.

D) Requested issues on the proposed design by USP

We confirmed that following issues shall be included in the final plans:

(1) Common Area

a) Theatre

A summary of the discussion on the Theatre building is attached in Annex-1.

b) Wash rooms

① Wash room on the 2nd floor in the Building-A shall be utilized exclusively as a staff toilet.

② The toilet on the 3rd floor in Building B shall serve as a handicapped toilet near to the theatre, rather than the 4th floor's toilet.

③ All wash rooms are to have electric air hand dryers installed. The Japanese side will provide outlets and USP will provide and install the equipment.

④ Space and provisions for drinking fountains shall be prepared in three places near to wash rooms. USP will provide and install the equipment.

(2) Computing Science section Building-B 4th floor.

a) The layout of the tables in the network laboratories shall be grouped by five 8-student tables.

b) Reconsider the clearance between the desks in all laboratories so that teacher can walk through near to columns.

c) The necessary support and wiring routes for ceiling projectors shall be provided by Japanese side so that USP can install them in the future.

(3) Engineering section Building-B 3rd floor.

a) Two fixed windows shall be set up in both the Technical staff room and Computer lab for Engineering Lab observation. The bottom height of the window shall be approx 1,300mm from the floor.

b) Shelves in the Engineering Lab shall have three tiers and sliding doors with glass. Top height shall one meter from the floor.

c) A service counter is required between the Engineering Lab and the Storage. The height of the counter is approx 1,100mm and width is approx 500mm.

(4) ITS section

a) The Help Desk service counter shall face the entrance halls to utilize the allocated space efficiently in Building-A's first floor. The height of the service counter is approx 1,100mm and width is approx 500mm.A sliding window with glass is required to separate students and staff.

b) Changing the location of workshop and storage next to the general office is required in Building-A, 2nd floor. If needed, the area of the storage can be reduced.

c) To secure air ventilation of the general office, it is preferable to install new windows on the west wall of the Building-A 2nd floor.

d) Network concept design will be provided by Japanese side.

(5) Building Code

Drawing and specs to comply with Fiji Building Code 1990.

(6) Building permission by USP

The consultant shall provide four copies of drawings and specs by June 2006 for USP to submit National Fire Authority (NFA), Occupational Health and Safety (OHS), and the Suva City Council (SCC)

(7) Other

a) The steel columns in the bridge part shall be covered by concrete.

b) Electrical locks are required at the entrance doors and office doors in R&D section. Building-B 2nd floor.

c) USP shall prepare an Environment Impact Assessment (EIA) report if required by Suva City Council (SCC).

Mr. Hiroyuki Koike, JICA
Project Manager / Architect
Azusa Sekkei Co., Ltd.

For
Prof. Anthony Tarr
Vice Chancellor
The University of the South Pacific

M. Lewis
Director, Planning & Development

Annex-1: Questions and Answers on the Multi – Purpose Theatre

(Attendance: Prof. Ian Gaskell, Ms. Linda Austin, M. Yamamoto from BD Study Team)

1	Can lobby function as a gallery? Is the furniture included in the Project?	The interior wall can be used to suspend art works. Furniture to be provided by USP.
2	Any washroom for the audience?	The audience can use toilets on the 2nd and 3rd floor of Building B.
3	The doors from the theatre should open outward.	The consultant will change the door to open outward.
4	The entrance door to the stage must be placed on the north side of the theatre.	The consultant will change the location of the door as required.
5	The height of the stage door should be 2.5 meters high.	The consultant will change the door height between 2.1 – 2.5 meters.
6	The floor finish of stage must be 'linoleum' preferably on the plywood flooring. The nail would be driven to support theatre props.	The finish is the vinyl sheet with a cushion used for the Ballet, finished on the concrete floor.
7	The storage space is shorted.	The consultant will adjust machinery space to increase the stage side area
8	The gridiron and H steel	The H steel of rigging loft is placed every 15 – 30 cm so that the backstage people can walk on it.
9	The 2nd and 3rd catwalk should be used to accommodate lighting instruments. For this purpose, the handrail should be 1and half inches in diameter.	The catwalk itself is just for maintaining the ceiling lights. However, the consultant will study the detail of handrail and ceiling sections.
10	The catwalk to be masked?	No need to mask it for the cost sake.
11	The lighting instrument from the 2nd catwalk should be zoom ellipsoidal, 8 degrees and 13 meter throw.	Stage lighting instruments will be provided by USP.
12	The metal halide lights should be changed to be dimmable type fixtures.	The consultants will change it to the dimmable type fixtures.
13	12 Circuits for lighting per FOH pipe	The circuits and pipes will be provided by USP.
14	12 Circuits per LX pipe, 36 in total	The circuits and pipes will be provided by USP.
15	6 Circuits per side as floor pocket	The consultant will check and involve in the electrical drawing.
16	All circuit should be connected to a cross connect system.	The dimmer, hook-up, control board will be provided by USP. So the consultant will prepare the pipe ducts.
17	Video Projector will be mounted?	It will be suspended from the ceiling at the rear of the theatre.
18	The side leg placement	The 4 rows will be decreased to 3 rows.
19	The legs to be either swivel or hinged battens.	The consultant will check which system would be adopted.
20	Floor power points on stage and the side of the 1st tier.	The consultant will involve the power point as requested.
21	Intercom is needed on stage and FOH	Intercom will be provided by USP.
22	Mic lines should be in the same place	The consultant will reflect the lines in the electrical drawing.
23	The projection screen seems small.	300-inch screen is big enough.
24	The black traveler involved in the Project should be changed to 'gold'.	The consultant will check the specification as requested.

8. List of References / Documents Obtained

Document name	Issued by	Remarks
Public Health (National Building Code) Regulations 2004	Ministry of Health	
Fiji Brief	Ministry of Information, Communications and Media relations.	
20 Year Development plan (2001-2020) For the enhancement of participation of indigenous Fijians and Rotumans in the socio-economic development of Fiji.	Ministry of Finance and National Planning	
Rebuilding confidence for stability and growth for a Peaceful, Prosperous Fiji Strategic development plan: 2003-2005 November 2002	Fiji Government	
Policy directions and strategies for the development and growth of information and communication technology.	Fiji Government	
National ICT strategy plan 2003-2005 & E-government cornerstone Program	Fiji Government	
The Fiji Government information technology policies and principals Version 2.00.00	Fiji Government	
Health and safety at work(general workplace conditions) regulations 2002	Ministry of Labor industry relations & Productivity	
An act to amend the health and safety at work act 1996	Ministry of Labor industry relations & Productivity	
Information and communication technologies for development in Pacific islands developing countries. 6-9 December 2004	USP Symposium summary	
Sub-regional symposium on ICTs for Development in Pacific islands developing countries. 6-9 December 2004	USP Symposium summary	
Pacific islands regional ICT consultation 9-11 April 2003	USP Symposium summary	
Pacific islands Information and Communication Technologies Policy and Strategic Plan. April 2002	CROP ICT working group	

Document name	Issued by	Remarks
USP 2005 calendar	USP	
Building space audit. University of south pacific	USP	
USP Annual 2003 report	USP	
USP Net 2000	USP	
USP strategic 2003 achievements	USP	
Development 2004 @ USP School of social economic development	USP	
Standards & Specification	USP	
A regional University of Excellence Weaving past and present for the future A vision to the year 2020	USP	
USP financial 2003 statements	USP	
SEED annual report 2003	USP	
Government strategic plan	Data#3 Group	
ATH annual report 2004	ATH	
Statistical News Consumer price index December 2004	Fiji islands Bureau of statistics	
Meteorological data	Fiji Meteorological Services	
Drawings on telephone line, water supply and drainage, and power supply	Public Works Department	
Seismic and tsunami data	Seismology section Ministry of Mineral resources	

8.1 Meteorological Data

Table- 1 Meteorological data of Suva city

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual Average
Max. temp. ( )	31.4	31.6	31.7	30.5	28.9	27.9	27.5	27.2	27.4	28.6	30.0	31.1	29.5
Min. temp. ( )	24.3	24.2	24.6	23.8	22.5	21.9	21.3	21.0	21.6	22.3	23.2	24.3	22.9
Precipitation (mm)	433	179	238	278	241	205	156	137	205	225	245	288	2831
Relative humidity (%)	82.0	81.8	81.8	82.6	80.6	82.4	81.0	80.6	80.4	79.2	79.4	80.4	81.0

(Source: Fiji Meteorological Service)

1) Damage caused by cyclones

Fiji is heavily inflicted by tropical cyclones every few years. Listed below is a summary of major cyclones that brought about severe damage to Fiji in the past ten years.

- 24- 30 Nov. 1990	Sina	Significant damage in the south and southwest regions of Fiji
- 6 -13 Dec. 1992	Joni	Damage in the southwest region. 1 dead.
- 26 Dec. 1992- 5 Jan. 1993	Kina	Damage in the northeast region. Flood in 60 years. 23 dead.
- 2-12 Mar. 1997	Gavin	Damage in the west region. 9 dead. Tuvalu also affected.
- 3- 5 May, 1997	June	3 dead due to soil avalanche caused by deluge.
- 5 -10 Jan. 2000	Iris	Gale in the western area. Torrent across the nation.
- 20-28 Jan. 2000	Jo	Gale and flood in the north region.

2) Damage caused by earthquakes and tsunami

Fiji and surrounding areas are prone to earthquakes. Listed below is a summary of major earthquakes in the last fifty years. As for tsunami disaster, a tsunami with a height of approximately 5m, caused by the earthquake on 8th March, 1953, killed 3 persons in Suva.

	Epicentre	Magnitude	
- 28 Apr. 1950	177.80°/-18.90°	M6.5	Quake in Suva
- 8 Mar. 1953	178.29°/-18.24°	M6.6	Most intense in the past with tsunami disaster
- 19 Jul. 1983	177.93°/-19.17°	M5.1	4 on the 12-degree scale
- 11 Feb. 1998	177.79°/-19.25°	M5.7	5 on the 12-degree scale
- 14 Feb. 2001	177.26°/-18.99°	M5.3	5 on the 12-degree scale
- 14 Feb. 2001	177.65°/-19.23°	M5.6	5 on the 12-degree scale
(Latest perceptible earthquake)			
- 26 Jan. 2005	178.37°/-18.01°	M3.3	Depth 25km

9. Results of the questionnaire targeting students

A write-in questionnaire to investigate the frequency of use and the percentage of possession of computers was conducted in the USP campus targeting students mainly of the Department of Computer Science.

The results show that the students surveyed use computers for 3.6 hours a day, 5.4 days a week on average for studying and preparing reports. Almost all the students expressed that the computers for students at the University are insufficient and a majority of them said that they cannot use computers when they need.

On the other hand, approximately a half of the students surveyed possess their own computers and about the same number of students answered that they study and write reports at home using theirs own.

In the free description about PCs for students at the University, many complained about the congestion due to a lack of PCs and the instability of the system. Some also pointed out the narrowness of PC labs and necessity for air conditioners.

Date of survey: Thursday, 3rd March, 2005

Place: In the building of the Department of Mathematical Computer Science of the USP

Respondents: 20 students randomly selected

Table 1 Summary of questions and results

Question		Results	
General Information	Faculty, department	Mathematical Computer Science: 16 students Information: 2 students Mathematical Physics: 2 students	
	Year	1st year: 3 students 2nd year: 1 students 3rd year: 15 students	
	Sex	Male: 8 students Female: 12 students	
	Nationality	Fiji: 19 students Other: 1 student (Solomon Islands)	
	Age	Average	21
Q1	Do you use a PC to study or prepare a repot?	Yes	20 students
		No	0 student
Q2	How often do you use a PC in a week?	Average	5.4 days/week
Q3	How often do you use a PC in a day?	Average	3.6 hours/day
Q4	Where do you use a PC to study or prepare a report?	University	20 students
		Home	11 students
		Other	3 students
Q5	Can you use a PC whenever you need?	Yes	7 students
		No	13 students
Q6	Do you have your own PC?	Yes	9 students
		No	11 students
Q7	Do you think PCs available for students' use are sufficient compared to the needs at the University?	Yes	1 student
		No	19 students
Q8	Please describe what you think the minimum requirements are for specifications and environment of PCs for students at the University.	Free description	

Table 2 Responses to Question 8 (free description)

- PCs are inadequate for the large number of students. The USP should expand and improve laboratories for students.
- PCs for students are apparently short. The USP server also fails down frequently.
- PCs are obviously short compared to the large number of students.
- Students have to wait for a long time in order to use a PC. The system is extremely slow and the server often goes down.
- Since many students enroll in the USP every year, PCs are not available for all students. PCs are insufficient in such classes that many students take.
- Though a great number of new students enrolled in the University this year, the facility is not sufficient. More PCs are needed.
- More labs are needed to save waiting time of students.
- Each of SOTT, SSEP and SPAS must have its own laboratory.
- It is far from convenient because it is not connected to the Internet during daytime.
- PCs must be available for one third of students of labs.
- Access is sometimes limited when the server is down. Sometimes it is very difficult to use PCs.
- The system is quite good overall, but the hardware does not function normally from time to time.
- PCs are not enough for students' needs. We sometimes have to wait for 30 minutes to use one.
- Students of the Department of Information Science must have one PC per ten students.
- Access speed of PCs is very slow.
- Most students cannot use PCs when they want.
- More PCs are needed.
- Want to have more appropriate software in PCs.
- Air-conditioned room
- The system is always congested.
- The computer lab is always used by classes. We need to wait for about 30 minutes to use a PC. Access is very difficult.
- Some of the PCs occasionally disappoint students by failing down.
- Internet access for students
- Spacious room
- Network printer
- Printer that is installed near PCs and have fast connection
- Large room instead of congested place
- Labs with a number of PCs commensurate with the increase of students.

10. List of requested equipments/Planned equipments

Code		Description	Code		Description	Priority	Req.	Planed	Note
COM	1	LCD Projector (L)	COM	1	LCD Projector (L)	A	5	1	
COM	2	LCD Projector (S)	COM	2	LCD Projector (S)/w Screen	A	7	2	
COM	3	Projection Screen (L)	COM	3	Projection Screen (L)	A	5		By Facility
COM	4	Projection Screen (S)	COM	4	Projection Screen (S)	A	7		Combined COM-2
COM	5	PC (Standard Lvel)	COM	5-1	PC (Desktop type)	A	38	1	
			COM	5-2	Desk & Chair for PC			1	
			COM	5-3	PC (Laptop type)			3	
COM	6	PC (High Level)	COM	6	PC (High Level)	B	4		
COM	7	Printer (Ink-jet)	COM	7	Printer (Ink-jet)	A	11		
COM	8	Printer (All-in-one type)	COM	8	Printer (All-in-one type)	A	4		
COM	9	Printer (Laser type/Monoclom)	COM	9	Printer (Laser type/Monoclom)	A	2		
COM	10	Printer (Laser type/Color)	COM	10	Printer (Laser type/Color)	A	1		
COM	11	OHC	COM	11	OHC	A	12	3	
COM	12	Lectern	COM	12	Lectern	A	6		By Facility
COM	13	DVD Player	COM	13	DVD Player	A	5	1	
COM	14	VCR	COM	14	VCR	A	10	2	
COM	15	White Board	COM	15	White Board	A	16	3	
COM	16	TV (29")	COM	16	TV	A	8	1	
COM	17	Web Cam and Microphone (S)	COM	17	Web Cam (w/Control System)	B	5		
COM	18	Web Cam and Microphone (M)	COM	18	Web Cam and Microphone (M)	B	5		
COM	19	Polycom Codex w/IMUX	COM	19	Polycom Codex w/IMUX	A	3		
COM	20	Remote Camera (w/Control System)	COM	20	Remote Camera (w/Control System)	A	6	1	
COM	21	Wireless Lapel Mic	COM	21	Wireless Lapel Mic	A	4		Combined COM-102
COM	22	Microphone	COM	22	Microphone	A	1		Combined COM-100
COM	23	Audio Mixer (8-10ch)	COM	23	Audio Mixer (8-10ch)	A	8		
COM	24	Audio Mixer (Professional)	COM	24	Audio Mixer (Professional)	A	2		Combined COM-100
COM	25	Power Amplifier	COM	25	Power Amplifier	A	16		Combined COM-100
COM	26	Audio Speaker	COM	26	Audio Speaker	A	16	2	
COM	27	Video/CRT Monitor (9")	COM	27	Video/CRT Monitor (9")	B	3		Combined COM-102
COM	28	Video/CRT Monitor (14")	COM	28	Video/CRT Monitor (14")	A	10		Combined COM-101
COM	29	Video Mixer	COM	29	Video Mixer	A	1		
COM	30	Mic/Line Mixer	COM	30	Mic/Line Mixer	A	1		Combined COM-100
COM	31	Audio-Video Distribution Amplifier	COM	31	Audio-Video Distribution Amplifier	A	7		
COM	32	Scan Converter	COM	32	Scan Converter	A	12		
COM	33	VGA Splitter	COM	33	VGA Splitter	A	12		
COM	34	Fibre Transmitter and Receiver Set	COM	34	Fibre Transmitter and Receiver Set	A	5		
COM	35	Fibre Driver	COM	35	Fibre Driver	A	10		

COM	36	Multi-system Converter	COM	36	Multi-system Converter	A	2		
COM	37	Polycom Quad Module	COM	37	Polycom Quad Module	B	12		Combined COM-102
COM	38	Conference PA System	COM	38	Conference PA System	A	2		Combined COM-103
COM	39	Conference Table (Special)	COM	39	Conference Table (Special)	A	1		
COM	40	Conference Table (General Type)	COM	40	Conference Table (General Type)	B	1		
COM	41	Table for Resource Centre	COM	41	Table for Resource Centre	B	1		
COM	42	Chair	COM	42	Chair	B	190		
COM	43	Equipment Console	COM	43	Equipment Console	A	1		
COM	44	Lighting Position (Overhead Grid)	COM	44	Lighting Position (Overhead Grid)	A	1		By Facility
COM	45	Lighting Position (Front of House Pipe)	COM	45	Lighting Position (Front of House Pipe)	A	1		By Facility
COM	46	Control System	COM	46	Control System	A	1		By Facility
COM	47	Circuit Boxe	COM	47	Circuit Boxe	A	1		By Facility
COM	48	Portable Dimmer Hook-up	COM	48	Portable Dimmer Hook-up	A	1		By Facility
COM	49	Sound Multi-cable Box for Mic and Line Input	COM	49	Sound Multi-cable Box for Mic and Line Input	A	1		By Facility
COM	50	Lighting Board	COM	50	Lighting Board	A	1		By Facility
COM	51	Digital Dimmer	COM	51	Digital Dimmer	A	48		By Facility
COM	52	Cyclorama	COM	52	Cyclorama	A	1		By Facility
COM	53	Black Backdrop	COM	53	Black Backdrop	A	1		By Facility
COM	54	Black Side Legs	COM	54	Black Side Legs	A	3		By Facility
COM	55	Black Border	COM	55	Black Border	A	3		By Facility
COM	56	Gold Traveller for Front Curtain	COM	56	Gold Traveller for Front Curtain	A	1		By Facility
COM	57	Stage Lighting Instrument	COM	57	Stage Lighting Instrument	A	53		By Facility
COM	58	Fresnel w/Barndoors	COM	58	Fresnel w/Barndoors	A	24		By Facility
COM	59	Variable Forcus Eleipsoidal Spot	COM	59	Variable Forcus Eleipsoidal Spot	A	24		By Facility
COM	60	Three-compartment Laniro Type Cyclorama Light	COM	60	Three-compartment Laniro Type Cyclorama Light	A	5		By Facility
COM	61	Front Projection Screen	COM	61	Front Projection Screen	A	1		By Facility
COM	62	Film Projection Screen	COM	62	Film Projection Screen	A	1		By Facility
COM	63	Wireless Microphone	COM	63	Wireless Microphone	A	1		Combined COM-100
COM	64	Conventional Microphone	COM	64	Conventional Microphone	A	1		Combined COM-100
COM	65	Studio Video Camera	COM	65	Studio Video Camera	A	3		
COM	66	Tripod for Studio Camera	COM	66	Tripod for Studio Camera	A	3		
COM	67	Wall-mounted Camera	COM	67	Wall-mounted Camera	A	1		
COM	68	Intercom Systema	COM	68	Intercom Systema	A	1		By Facility
COM	69	Time-base Corrector	COM	69	Time-base Corrector	A	1		
COM	70	Syncro Generator	COM	70	Syncro Generator	A	1		
COM	71	Vectorscope	COM	71	Vectorscope	A	1		
COM	72	Patch Panel Bay	COM	72	Patch Panel Bay	A	1		
COM	73	Headphone	COM	73	Headphone	B	2		
COM	74	Broadcast Microphone	COM	74	Broadcast Microphone	A	2		
COM	75	Dual Cassette Playback Unit	COM	75	Dual Cassette Playback Unit	A	1		
COM	76	Studio Monitor	COM	76	Studio Monitor	A	2		
COM	77	Turntable	COM	77	Turntable	A	1		

COM	78	AM/FM Audio Receiver	COM	78	AM/FM Audio Receiver	A	1		
COM	79	CD-DVD Player	COM	79	CD-DVD Player	A	6		
COM	80	Macintosh PC	COM	80	Macintosh PC	A	2		
COM	81	Console for Audio Mixser	COM	81	Console for Audio Mixser	A	1		
COM	82	Automated Radio System Software	COM	82	Automated Radio System Software	B	1		
COM	83	Remote-broadcast Set-up	COM	83	Remote-broadcast Set-up	A	1		
COM	84	Server	COM	84	Server	A	1		
COM	85	Fax Machine	COM	85	Fax Machine	B	1		
COM	86	Microwave Oven	COM	86	Microwave Oven	C	1		
COM	87	Refrigerator	COM	87	Refrigerator	C	1		
COM	88	Tea Kettle	COM	88	Tea Kettle	C	2		
COM	89	Water Cooler/Water Purifier	COM	89	Water Cooler/Water Purifier	C	1		
COM	90	Microfilm Reader/Scanner	ADD	1	Microfilm Reader/Scanner	A	4	1	
COM	91	Scanner (Flat Bed Type)	ADD	2	Scanner (Flat Bed Type)	A	3	1	
COM	92	Scanner (Book Scanner Type)	COM	92	Scanner (Book Scanner Type)	A	1		
COM	93	Photocopier	COM	93	Photocopier	A	2		
COM	94	Book Binding Machine	COM	94	Book Binding Machine	A	1		
COM	95	Ring Binding Machine	COM	95	Ring Binding Machine	A	1		
COM	96	Shelves	COM	96	Shelves	A	1		
COM	97	Various Connector/Cable/Accessories	COM	97	Various Connector/Cable/Accessories	A	1		
			COM	100	Audio Control System for Multipurpose Theater			1	
			COM	101	Video Control System for Multipurpose Theater			1	
			COM	102	A/V Control System for Video Conference Room			1	
			COM	104	A/V Control System for Conference Room			1	
CSC	1	Floor-standing Rack for Router/Switching etc.	CSC	1	Server w/Rack	A	3	1	
CSC	2	Multivendor Platform Router	CSC	2	Multivendor Platform Router	B	10		
CSC	3	Ethernet Switch (48 port)	CSC	3	Ethernet Switch (48 port)	A	6		
CSC	4	Ethernet Switch (24 port)	CSC	4	Switching HUB	A	6	1	
CSC	5	Patch Panel (48 port)	CSC	5	Patch Panel (48 port)	A	6		
CSC	6	Patch Panel (24 port)	CSC	6	Patch Panel	A	6	1	
CSC	7	Wireless Access Point	CSC	7	Wireless Access Point	A	4		
CSC	8	Wireless LAN Card	CSC	8	Wireless LAN Card	B	20		
CSC	9	Bluetooth	CSC	9	Bluetooth	A	10		
CSC	10	Ethernet Card	CSC	10	Ethernet Card	A	40	40	
CSC	11	Handheld Device for Mobile Networking	CSC	11	Handheld Device for Mobile Networking	A	10		
CSC	12	Laptop for Mobile Networking	CSC	12	Laptop for Mobile Networking	A	6		
CSC	13	Cables & others	CSC	13	Cables & others	B	4		
CSC	14	Server	CSC	14	Server	C	2		
CSC	15	PC for experimental work	CSC	15-1	PC (Desktop type)	A	40	150	
			CSC	15-2	Desk & Chair for PC			150	
CSC	16	Embedded System Board	CSC	16	Embedded System Board	A	40	4	
CSC	17	Oscilloscope	CSC	17	Oscilloscope	A	3	2	

CSC	18	Desktop PC for Teaching Computer Laboratory	CSC	18	Desktop PC for Teaching Computer Laboratory	A	200		
CSC	19	Desktop PC for Staff	CSC	19	Desktop PC for Staff	B	54		
CSC	20	Desktop PC for Research	CSC	20	Desktop PC for Research	A	50		
CSC	21	PC for Postgraduate Laboratry	CSC	21	PC for Postgraduate Laboratry	A	40		
CSC	22	Highend Server	CSC	22	Highend Server	B	3		
CSC	23	Laser Printer for Staff	CSC	23	Laser Printer for Staff	B	7		
CSC	24	Laser Printer for Student	CSC	24	Printer	A	5	2	
CSC	25	Back up Facilities	CSC	25	Back up Facilities	A	1		
CSC	26	Desk	CSC	26	Desk	B	104		
CSC	27	Chair	CSC	27	Chair	B	104		
CSC	28	File Cabinet	CSC	28	File Cabinet	B	27		
CSC	29	White Board	CSC	29	White Board	B	1		
ITS	1	Server	ITS	1	Server (High Level)	A	2	6	
ITS	2	Web Server	ITS	2	Web Server	A	4		Combined ITS-1
ITS	3	Server	ITS	3	Server (General Level)	A	24	14	
ITS	4	Tape Backup Archive	ITS	4	Tape Backup Archive	A	1	1	
ITS	5	General Purpose Server	ITS	5	General Purpose Server	A	4		Combined ITS-3
ITS	6	Network Switch	ITS	6	Switching HUB	A	2	1	
ITS	7	UPS (L)	ITS	7	UPS (L)	A	30	1	
ITS	8	Wev Proxy	ITS	8	Wev Proxy	B	2		
ITS	9	Terminal Server	ITS	9	Terminal Server	C	2		
ITS	10	Desktop Computer	ITS	10	Desktop Computer	B	65		
ITS	12	Fiber Channel San	ITS	12	Fiber Channel San	C	1		
ITS	13	Rack Modem/Access Server	ITS	13	Rack Modem/Access Server	C	1		
ITS	14	Monitoring Station	ITS	14	Monitoring Station	C	6		
ITS	15	Desktop Computer for Professional Training Lab.	ITS	15-1	PC (Desktop type)	A	52	120	
			ITS	15-2	Desk & Chair for PC			120	
ITS	16	Desktop Computer for Development Training Lab.	ITS	16	Desktop Computer for Development Training Lab.	A	52		
ITS	17	Desktop Computer for Research & Development Lab.	ITS	17	Desktop Computer for Research & Development Lab.	B	11		
ITS	18	Desktop Computer for General Access Lab.	ITS	18	Desktop Computer for General Access Lab.	A	400		
ITS	19	Desktop Computer for Disabled Student Lab.	ITS	19	Desktop Computer for Disabled Student Lab.	A	5		
ITS	20	Printer	ITS	20	Printer	A	14	2	
ITS	21	Switch	ITS	21	Switch	A	35		
ITS	22	Data Projector	ITS	22	LCD Projector (S)/w Screen	A	13	2	
ITS	23	Surveillance Camera	ITS	23	Surveillance Camera	C	30		
ITS	24	Surveillance Management System	ITS	24	Surveillance Management System	B	1		
ITS	25	Server (w/UPS)	ITS	25	Server (w/UPS)	A	5		
ITS	26	White Board	ITS	26	White Board	B	30		
ITS	27	Fibere Optic Cable	ITS	27	Fibere Optic Cable	A	1		Combined ITS-60
ITS	28	Video Codecs	ITS	28	Video Codecs	A	7		Combined ITS-60
ITS	29	Polycom Inberse Multiplexer for View Staition	ITS	29	Polycom Inberse Multiplexer for View Staition	A	7		Combined ITS-60

ITS	30	Equipment Rack	ITS	30	Equipment Rack	A	3	1	
ITS	31	Console for Video-broadcast Switching	ITS	31	Console for Video-broadcast Switching	A	4		Combined ITS-60
ITS	32	PC for Schduler	ITS	32-1	PC (Desktop type)	A	1	1	
			ITS	32-2	Desk & Chair for PC			1	
ITS	33	Work Bench	ITS	33	Work Bench w/Chair	B	1	1	
ITS	34	Video Monitor	ITS	34	Video Monitor	A	24		Combined ITS-60
ITS	35	VHS-CD-DVD Combo Redcorder	ITS	35	VHS-CD-DVD Combo Redcorder	A	6	2	
ITS	36	Video Mixer	ITS	36	Video Mixer	A	4		Combined ITS-60
ITS	37	Mic/Line Mixer	ITS	37	Mic/Line Mixer	A	1		Combined ITS-60
ITS	38	Fiber Driver	ITS	38	Fiber Driver	A	6		Combined ITS-60
ITS	39	HDSL Data Termination Unit	ITS	39	HDSL Data Termination Unit	A	1		Combined ITS-60
ITS	40	V.35 Data Termination Unit	ITS	40	V.35 Data Termination Unit	A	1		Combined ITS-60
ITS	41	Audio-Video Distribution Amplifier (Video)	ITS	41	Audio-Video Distribution Amplifier (Video)	A	4		Combined ITS-60
ITS	42	Audio-Video Distribution Amplifier (Audio)	ITS	42	Audio-Video Distribution Amplifier (Audio)	A	2		Combined ITS-60
ITS	43	PC for Staff	ITS	43	PC for Staff	A	3		Combined ITS-60
ITS	44	Printer for Staff	ITS	44	Printer for Staff	A	2		Combined ITS-60
ITS	45	Video Broadcast Facility	ITS	45	Video Broadcast Facility	A	3		Combined ITS-60
ITS	46	Tablet PC	ITS	46	Tablet PC	A	4		
ITS	47	OHC	ITS	47	OHC	A	2		
ITS	48	LCD Projector W/Screen	ITS	48	LCD Projector W/Screen	A	4		
ITS	49	Desk	ITS	49	Desk	B	95		
ITS	50	Chair	ITS	50	Chair	B	95		
ITS	51	File Cabinet	ITS	51	File Cabinet	B	27		
ITS	52	White Board	ITS	52	White Board	B	1		
			ITS	60	A/V System for UPS Net Control Room			1	
RDI	1	Fax	RDI	1	Fax	A	1		
RDI	2	PC	RDI	2	PC	A	9		
RDI	3	Network Analyzer	RDI	3	Network Analyzer	A	2		
RDI	4	Spectrum Analyzer	RDI	4	Spectrum Analyzer	A	1		
RDI	5	Signal Generator	RDI	5	Signal Generator	A	1		
RDI	6	Transmitter Receiver	RDI	6	Transmitter Receiver	A	1		
RDI	7	Digital CRO	RDI	7	Digital CRO	A	1		
RDI	8	Router	RDI	8	Router	A	2		
RDI	9	Photocopy	RDI	9	Photocopy	A	2		
RDI	10	PLC Modem	RDI	10	PLC Modem	A	1		
RDI	11	TPE Transformer Point Equipment	RDI	11	TPE Transformer Point Equipment	A	1		
RDI	12	CPE	RDI	12	CPE	A	1		
RDI	13	Internet Modem	RDI	13	Internet Modem	A	1		
RDI	14	Wireless Security Equipment	RDI	14	Wireless Security Equipment	A	1		

RDI	15	SCADA Equipment and Control	RDI	15	SCADA Equipment and Control	A	1		
RDI	16	Radio Trunking-Receiver	RDI	16	Radio Trunking-Receiver	A	1		
RDI	17	Satellite Receiver	RDI	17	Satellite Receiver	A	1		
RDI	18	Receiving Dish	RDI	18	Receiving Dish	A	1		
RDI	19	Printer	RDI	19	Printer	A	1		
RDI	20	Plotter	RDI	20	Plotter	A	1		
RDI	21	Digital Camera	RDI	21	Digital Camera	A	1		
RDI	22	Mageillan Pro Mobile Robot	RDI	22	Mageillan Pro Mobile Robot	B	1		
RDI	23	Manufacturing Network	RDI	23	Manufacturing Network	C	1		
RDI	24	Servo Robot	RDI	24	Servo Robot	C	1		
RDI	25	Automate Storage Vision Inspection System	RDI	25	Automate Storage Vision Inspection System	C	1		
RDI	26	CNC Machining Centre	RDI	26	CNC Machining Centre	C	1		
RDI	27	CNC Lathe	RDI	27	CNC Lathe	C	1		
RDI	28	Master Cam	RDI	28	Master Cam	C	1		
RDI	29	Server	RDI	29	Server	A	2		
RDI	30	Three axis Magnetometer	RDI	30	Three axis Magnetometer	C	1		
RDI	31	Rio Meter	RDI	31	Rio Meter	C	1		
RDI	32	Desk	RDI	32	Desk	B	6		
RDI	33	Chair	RDI	33	Chair	B	6		
RDI	34	File Cabinet	RDI	34	File Cabinet	B	6		
RDI	35	White Board	RDI	35	White Board	B	2		
ENG	1	Oscilloscope	ENG	1	Oscilloscope	A	8		
ENG	2	Spectrum Analyzer	ENG	2	Spectrum Analyzer	A	1		
ENG	3	Power Sensor	ENG	3	Power Sensor	A	1		
ENG	4	Vector Signal Generator	ENG	4	Vector Signal Generator	A	1		
ENG	5	Analog Communications	ENG	5	Analog Communications	A	8	1	
ENG	6	Analog Communications Training System	ENG	6	Analog Communications Training System	A	8	1	
ENG	7	Fiber Optic Communications	ENG	7	Fiber Optic Communications	A	3	1	
ENG	8	Antenna Training and Measuring System	ENG	8	Antenna Training and Measuring System	A	3	1	
ENG	9	Microwave Technology Training System	ENG	9	Microwave Technology Training System	A	3	1	
ENG	10	Radar Training System	ENG	10	Radar Training System	A	3		
ENG	11	Digital Communications 1	ENG	11	Digital Communications 1	A	8	1	
ENG	12	Digital Communications 2	ENG	12	Digital Communications 2	A	8	1	
ENG	13	Digital Communications Training System	ENG	13	Digital Communications Training System	A	8	1	
ENG	14	Fiber Optics & Lasers	ENG	14	Fiber Optics & Lasers	A	3		
ENG	15	GPS -1010 Global Positioning System Trainer	ENG	15	GPS -1010 Global Positioning System Trainer	A	3		
ENG	16	PCB Etching Machine	ENG	16	PCB Etching Machine	A	2		
ENG	17	Oscilloscope	ENG	17	Oscilloscope	A	30	10	
ENG	18	Power Supply	ENG	18	Power Supply	A	30	10	
ENG	19	Signal Generator	ENG	19	Signal Generator	A	30	10	
ENG	20	Multimeter	ENG	20	Multimeter	A	30	10	
ENG	21	Soldering Station	ENG	21	Soldering Station	A	30	10	

ENG	22	Tool kits	ENG	22	Tool kits	B	30	10	
ENG	23	Digital Scope Meter	ENG	23	Digital Scope Meter	B	30		
ENG	24	Power Electronics Training Module	ENG	24	Power Electronics Training Module	A	1		
ENG	25	Digital Signal Processing Kit	ENG	25	Digital Signal Processing Kit	B	10		
ENG	26	Wind Turbine	ENG	26	Wind Turbine	A	1		
ENG	27	Solar Panel	ENG	27	Solar Panel	A	5		
ENG	28	Power Inverter	ENG	28	Power Inverter	A	5		
ENG	29	Bread Board	ENG	29	Bread Board set	B	30	10	
ENG	30	PIC Microcontroller Development Kit	ENG	30	PIC Microcontroller Development Kit	A	30		
ENG	31	Momentum PLC	ENG	31	Momentum PLC	A	30		
ENG	32	Motor Winding Kit	ENG	32	Motor Winding Kit	B	5		
ENG	33	PC	ENG	33-1	PC (Desktop type)	A	60	15	
			ENG	33-2	Desk & Chair for PC			15	
ENG	34	Server/Workstation	ENG	34	Server w/Rack	A	3	1	
ENG	35	Battery Pack	ENG	35	Battery Pack	B	5		
ENG	36	Automation Unit	ENG	36	Automation Unit	A	1		
ENG	37	Turning Centre	ENG	37	Turning Centre	A	2		
ENG	38	Milling Centre	ENG	38	Milling Centre	A	2		
ENG	39	PS3 Robot/RC520 PC Controller	ENG	39	PS3 Robot/RC520 PC Controller	A	2		
ENG	40	Desktop Robot	ENG	40	Desktop Robot	A	4		
ENG	41	All-Terrain Robot	ENG	41	All-Terrain Robot	A	4		
ENG	42	Hemisson Education Robot	ENG	42	Hemisson Education Robot	A	10		
ENG	43	KoreBot Robotid Development Board	ENG	43	KoreBot Robotid Development Board	A	4		
ENG	44	Yamabico	ENG	44	Yamabico	A	2		
ENG	45	Lab. Table W/Chair	ENG	45	Lab. Table W/Chair	B	30	10	
ENG	46	LCD Projector W/Screen	ENG	46	LCD Projector W/Screen	A	4	2	
ENG	47	Counter Table	ENG	47	Counter Table	B	3		
ENG	48	Desk	ENG	48	Desk	B	1		
ENG	49	Chair	ENG	49	Chair	B	1		
ENG	50	File Cabinet	ENG	50	File Cabinet	B	1		
ENG	51	Equipment Rack	ENG	51	Equipment Rack	B	15		
GIS	1	Desk	GIS	1	Desk	A	11		
GIS	2	Chair for Teacher	GIS	2	Chair for Teacher	A	49		
GIS	3	Chair for Student	GIS	3	Chair for Student	A	30		
GIS	4	Computer Desk/Chair	GIS	4	Computer Desk/Chair	A	15		
GIS	5	Bookshelf	GIS	5	Bookshelf	A	5		
GIS	6	Filing Cabinet	GIS	6	Filing Cabinet	A	14		
GIS	7	Low Map Table w/Chair	GIS	7	Low Map Table w/Chair	A	1		
GIS	8	Teaching Desk w/Chair	GIS	8	Teaching Desk w/Chair	A	1		
GIS	9	Dual Screen PC w/Auto-stereo Display & Frat CRT Monnitor	GIS	9	Dual Screen PC w/Auto-stereo Display & Frat CRT Monnitor	A	26		
GIS	10	Audiovisual Console	GIS	10	Audiovisual Console	A	1		
GIS	11	Computer Projector	GIS	11	Computer Projector	A	2		
GIS	12	Projector screen	GIS	12	Projector screen	A	2		

GIS	13	White Board (S)	GIS	13	White Board (S)	A	45		
GIS	14	White Board (L)	GIS	14	White Board (L)	A	2		
GIS	15	Digitizing Tablet	GIS	15	Digitizing Tablet	A	46		
GIS	16	Pin up Board	GIS	16	Pin up Board	B	14		
GIS	17	Long Bench	GIS	17	Long Bench	B	4		
GIS	18	Server	GIS	18	Server	B	5		
GIS	19	Network System	GIS	19	Network System	A	2		
GIS	20	Dual Screen Photogrammetric Workstation	GIS	20	Dual Screen Photogrammetric Workstation	A	1		
GIS	21	Single Screen Workstation	GIS	21	Single Screen Workstation	A	25		
GIS	22	Map Cabinet	GIS	22	Map Cabinet	A	4		
GIS	23	Aerial Photograph Cabinet	GIS	23	Aerial Photograph Cabinet	A	4		
GIS	24	Map Table w/Light Table	GIS	24	Map Table w/Light Table	A	1		
GIS	25	Shelves for Equipment	GIS	25	Shelves for Equipment	A	2		
GIS	26	Digital Aerial Imaging Camera (w/Integrated High Precision GPS)	GIS	26	Digital Aerial Imaging Camera (w/Integrated High Precision GPS)	A	2		
GIS	27	Field Spectrometer	GIS	27	Field Spectrometer	A	2		
GIS	28	GPS Mobile Mapping System	GIS	28	GPS Mobile Mapping System	A	20		
GIS	29	Sidescan Sonar	GIS	29	Sidescan Sonar	B	1		
GIS	30	High Resolution Scanner for Scanning Aerial Photograph and Interpretation Overlays	GIS	30	High Resolution Scanner for Scanning Aerial Photograph and Interpretation Overlays	A	1		
GIS	31	Plotter (A0)	GIS	31	Plotter (A0)	B	1		
GIS	32	Laminator (A0)	GIS	32	Laminator (A0)	B	1		
GIS	33	Colour Laser Printer (A3)	GIS	33	Colour Laser Printer (A3)	B	1		
GIS	34	Colour Map and Plan Scanner (A0)	GIS	34	Colour Map and Plan Scanner (A0)	A	1		
GIS	35	Total Station	GIS	35	Total Station	A	8		
GIS	36	Surveying Automatic Level	GIS	36	Surveying Automatic Level	B	10		
GIS	37	Survey Grade GPS Base Station	GIS	37	Survey Grade GPS Base Station	C	1		

11. Result of Topographical and Geological survey on the project site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