

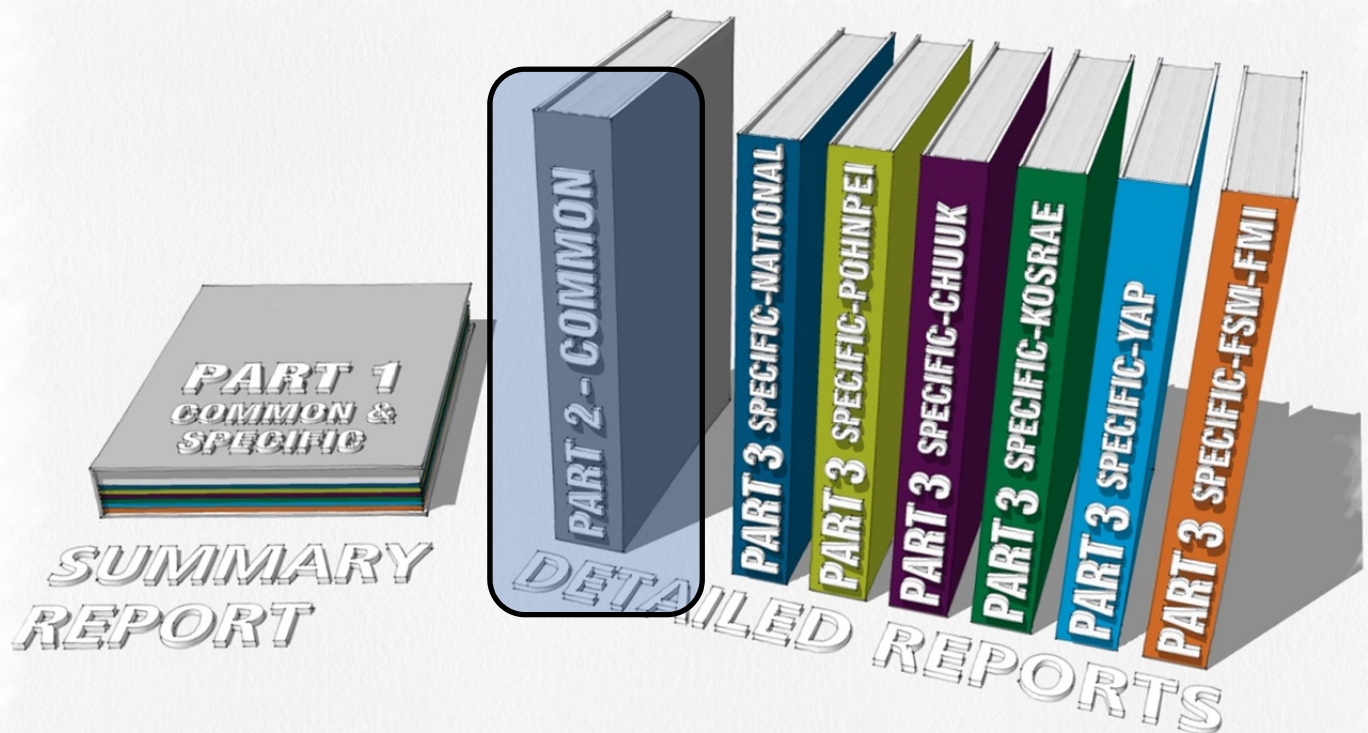
Report

# College of Micronesia - FSM Space Utilization and Facilities Master Plan Study - Part 2 Detailed Report - Common to All Campuses

Prepared for the College of Micronesia - FSM

Prepared by Beca International Consultants Ltd (Beca)

28 November 2013



## Revision History

Revision N°	Prepared By	Description	Date
1	Annette Jones	Draft for review by PCG	31/10/2013
2	Annette Jones	Final review issue for Board of Regents meeting on the 2 <sup>nd</sup> December 2013	28/11/2013
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4			
5			

## Document Acceptance

Action	Name	Signed	Date
Prepared by	Annette Jones, Mark Wilson, Warren Perkins, Mark James, Paul Leman, Claire Green. Wilson Hess /James Mulik from Sandy Pond Associates (Contributors of the Classroom Utilization Study)		28/11/13
Reviewed by	Fraser Vickers Joe Briffa – Energy Audit Mark Wilson – Condition Assessment		28/11/13
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on behalf of	Beca International Consultants Ltd		

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## Executive Summary (draft for discussion)

The COM-FSM Space Utilization and Facilities Master Plan Study provides a summary of the current facilities condition and their utilization, the long term vision for the campuses; and the proposed staging to achieve this vision.

Some key points to consider in the implementation of the findings of this Facilities Study are:

### **New facilities tied to educational delivery**

The link between the expansion of campus facilities justified on the basis of educational delivery requirements and/or new course delivery

### **Projected headcount as the driver for campus facilities**

The need to align the allocation of new facilities through consideration of the projected headcount for each campus and how this is balanced across all campuses.

### **Premier education facility**

There is an opportunity for COM-FSM to maintain its position as the premier education provider with facilities of a quality to support National and State educational outcomes.

### **Preparedness for 2023**

Through the implementation of the College's Facilities Master Plan informed by this Facilities study position the COM-FSM in the best shape post the Compact agreement review. The strategy to achieve this is to:

- Replace buildings that have disproportionate operational costs and/or have identified structural or building fabric condition issues
- Provide for targeted upgrades of the remaining buildings and/or retrofit for new or alternative functions

### **Bridge the funding gap through grants**

To identify the funding available and implement a strategy of applying for additional grant funding to achieve all the projects outlined in the first five year plan within that period

### **Identify the COM-FSM referenced maintenance level**

The need to identify the appropriate building management framework to implement the College's Facilities Master Plan informed by this Facilities study that acknowledges the climate, cultural and financial funding factors

### **Project execution and capacity building**

There is an opportunity in the implementation of the College's Facilities Master Plan informed by this Facilities study to provide "real" world facilities management teaching opportunities for staff and students for the benefit of the nation.

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Indicative Asset Renewal and Maintenance Cost Plan

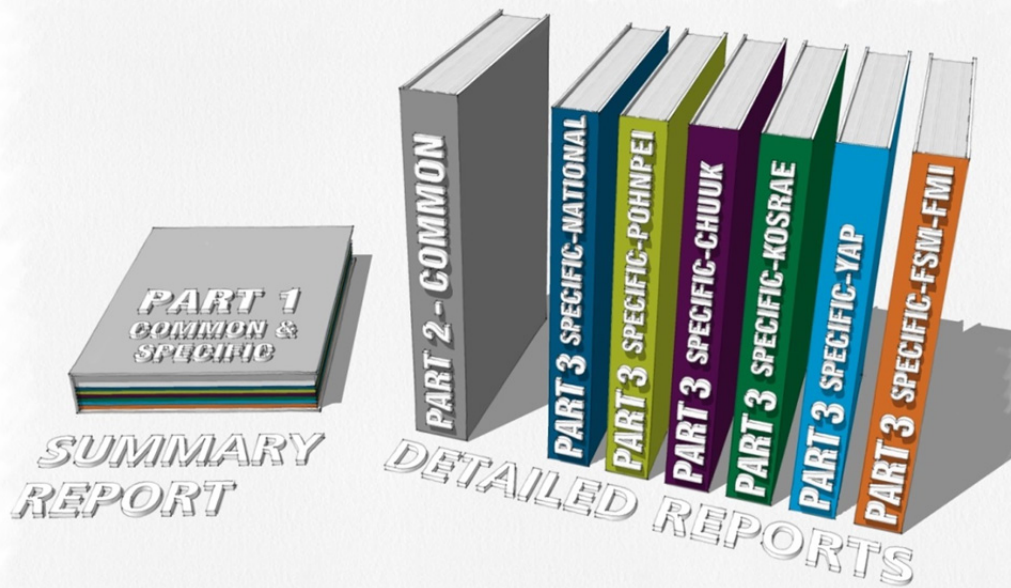
### Appendix E

Spatial Utilization and Facilities Master Plan Study Rough Order of Cost Estimates

# 1 Purpose of the Part 2 Volume - Common to All Campuses Detailed Report

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The Part 2 report provides a summary of the reviews that are common to all campuses these being the space utilization study, the asset condition assessment and the energy review actions. It provides a comprehensive overview of prioritized project plans across all campuses and the common design principles proposed to underpin this future development.



## 2 College Wide Development Strategy

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This development strategy has grown out of the Facilities Study process identifying the necessary steps to achieve the educational and community goals/ vision of the College of Micronesia - FSM. The recommended development strategy for the six College of Micronesia campuses is to:

1. Continue with COM-FSM being located across six campus locations with:

- The state campuses providing 100 and 200 courses and providing the role of transition into degree courses generally offered at the National campus
- The existing National campus strengthened as the campus where most degree courses are offered
- The existing Pohnpei campus being recognised as the Career and Technical Education Center and for the efficient use of resources be the sole vocational facility for the nation
- There being one campus in two locations in Pohnpei each with their own character and offering but with increased sharing between the two

2. Focus on sustainability of the existing campuses buildings and infrastructure by:

- Identifying funding source/s for maintenance and renewals
- Working through the proposed maintenance recommendations to address deferred maintenance and minimise the escalation of campus building maintenance and renewal costs
- Reducing the maintenance cost through the removal and replacement of buildings and infrastructure that contribute to a disproportionate amount of the operating and maintenance costs

3. Focus on the future sustainability of the COM-FSM campuses beyond 2023 by:

- Following a staged development approach for each campus broken into 5, 10 and 10 + years with plan reviews/ updates at 5 year intervals to assess the impact of changes in actual and projected student numbers plus changes to education delivery, plus prioritising the development of campus assets as follows:
  - i. Addressing any health and safety issues
  - ii. Projects that have a link to educational outcomes
  - iii. Other projects that assist to support better campus outcomes
- Designing replacement and new buildings to be delivered through staged implementation and/or designed to have a multipurpose function allowing for change of use over time
- Focussing on sustainable design principles for new buildings i.e. passive solar design, material selection, use of natural ventilation and insulation to reduce operational cost.
- Reducing the maintenance cost through the removal and replacement of buildings and infrastructure that contribute to a disproportionate amount of the operating and maintenance costs

4. Implement a development strategy that:

- Is fiscally responsible and is informed from an evidence base i.e. space utilization study, condition assessment, spatial review components
- Prioritises the provision of dedicated classroom space for Vocational Education giving effect to the Board of Regents Two-Year Action Agenda's emphasis on vocational programming
- Works towards a permanent site for the Chuuk campus on the Nantaku site based on a review of the spatial requirements, proposed infrastructure servicing and access assumptions from the 2001 Master Plan
- Considers development beyond the traditional classroom and Learning Resource Center models acknowledging that with the availability of wi-fi the location for learning to occur is no longer restricted to just these spaces



## 2.1 Project Prioritization and Identification

### 2.1.1 Project prioritization

The development strategy underpins a series of projects that have been identified for each campus. These have been identified in considering the physical condition, spatial quality and energy efficiency of the current campuses particularly through the focus groups undertaken with students, faculty and staff as well as discussions with Deans of each campus.

The projects have been through a process of prioritization for each campus – identifying projects that are desired in the short term (next 5 years), medium term (10 years) and the long term (10+ years). A campus specific project plan, capturing the projects with their cost estimates, is included within each of the respective Part 3 Campus Detailed Reports.

The consolidated project plan included in this section brings together all the campus projects into a potential program, developed with the underlying principle of providing parity across campuses. Fundamental to this is the application of financial constraints, so the consolidated project list has been reviewed against the identified funding stream as informed by the PCG during the study.

### 2.1.2 Project identification

The outputs of the Space Utilization and Facilities Master Plan Study have informed the prioritization of facilities improvements. The inputs to the decisions made with regard to project development and prioritization has been drawn from a range of work streams, these being:

**Classroom utilization study – a component of the spatial review workstream:** The fourth key finding of the space utilization study is that “dedicated classroom space for Vocational Education should receive priority attention in facilities planning” with consideration in regard to the Pohnpei and Yap campus in the first instance. It is noted that the Board of Regents Two Year Action Agenda has placed an emphasis on vocational programming.

A further point raised as an outcome of the study is that the analysis suggests “there is little need to increase overall institutional classroom capacity on the basis of any foreseeable trend.” The basis to this point is that the overall classroom need as measured by projected enrolment changes throughout COM-FSM six-campus system is noted as relatively flat within the ten year horizon.

**Key point from the classroom utilization study:** The existing campuses are adequately provided for in regard to teaching spaces. The drivers for removing, relocating and/or replacing existing facilities do not come from a requirement to provide additional classroom space.

**Asset (Building and Infrastructure) Condition Assessment workstream:** A series of buildings have been identified and it is considered uneconomic to renew/maintain the building or asset and demolition/ replacement is recommended. This has come from either feedback received from the facilities questionnaire on specific building condition or observations from the assessment visit and analysis suggesting either structural failure of the foundations or building frame elements. This is further outlined in Section 2.3.

**Spatial review workstream:** The development of activity zones grouping similar activities in close proximity has led to a review of building suitability based on their location and function. The result is a list of projects where functions are proposed to be moved to achieve operational efficiency. Suggestions for modifications to buildings to suit new functions are also made in the campus project list.

To establish parity across campuses additional space is suggested for functions where the desired COM –FSM spatial target is not reached.

A review of the facilities that need to be provided for a future headcount number has also been completed. This has found that on some campuses there is need for additional Learning Resource Center or computer lab space along with facilities such as toilets or carparking to cater for the projected increased headcount.

Lastly, new activities that require specific buildings with spaces of a size and shape not already provided for on each campus completes the project list. A comprehensive campus list identifying proposed projects is contained in Chapter 2.6.

## 2.2 Ability for Campuses to Meet the Spatial Requirements of an Additional Headcount with Existing Classroom and other Facilities

As outlined in 2.1.2 Project Identification, “there is little need to increase overall institutional classroom capacity on the basis of any foreseeable trend.”

The historical data on enrolment figures from the COM-FSM website shows the fluctuation of headcounts over the last 10 year period. What is revealed by these figures is the ability of each campus to absorb increased headcount numbers.

### Enrollment trends Fall Semester 2004 - 2013 by Campus

Term	Chuuk	Kosrae	National	Pohnpei	Yap	Total
Fall 2004	690	322	968	567	149	2696
Fall 2005	371	320	929	583	176	2379
Fall 2006	548	194	974	620	177	2513
Fall 2007	491	184	903	608	180	2366
Fall 2008	457	252	895	642	209	2455
Fall 2009	580	233	1005	712	228	2758
Fall 2010	479	218	1051	742	209	2699
Fall 2011	493	261	1088	845	228	2913
Fall 2012	409	268	1069	771	227	2744
Fall 2013	319	243	1017	672	195	2446

Further to this historical table the planning for the future requirements of each campus has been informed by the findings of the Education Assessment Study by Sandy Pond Associates (refer to Chapter 6 of this report):

One of the key planning tools is the campus design capacity driven by the 5-Year study period utilization rates and actual enrolments.

Following is an excerpt from Sandy Pond Associates to provide background:

**Capacity Headcount by Campus**

Chuuk	Kosrae	National	Pohnpei	*Yap
702	374	1300	956	364

*\* Note that the use of historic & observed data over the five year study period on the Yap campus does not fully account for classroom capacity represented by construction that just came into service or left service in Fall 2013.*

It should be noted that capacity is not a precise measure. It is influenced by a number of variables, including programmatic enrolments, pedagogical methodologies, and new program demands.

The methodology chosen utilizes the average of the historic headcounts and the average observed classroom utilization rates during the 5 year study period. The historic headcounts were divided by the average observed utilization rates for each campus location.

Across all campuses, this methodology suggests that cumulatively a growth factor of 34% above the 5 year study period average remains. This factor varies widely on each campus:

Chuuk	Kosrae	National	Pohnpei	*Yap
45%	52%	27%	19%	34%

**Note:** These capacity recommendations per campus are not seating capacities and classroom space should not be allocated or designed based on these figures. Furthermore, these capacities are based upon campus headcounts and are derived from the utilization rates of classrooms on each campus and thus can be used with some confidence to project the ability of the campus to function within these limits.

## 2.3 Assessing the Need for Additional Facilities Based on the 2018 Projected Headcount Figure

The COM-FSM Fall Enrollment Trends (2004-2023) captured in TABLE I.C.1 in Chapter 6 shows a total projected headcount figure in 2023 of 2914. This is less than the capacity headcount of 3696.

The briefing for the desired new facilities was taken on the campus site visits and has been assessed post trip against the projected headcount (from the space utilization review). The 2018 headcount figure has been selected as a facilities design figure as it is understood that there will be a review after a 5 year period. This provides an opportunity to check the actual headcount number and see if it is trending up or down.

As seen in the table below the 2018 headcount figures for some campuses is less than the current headcount. The impact of this is that there will be less projects on some campuses than anticipated. This information was made available after the August spatial review site visits. One of the drivers for the project prioritization is to achieve parity of facilities across campuses informed by the projected headcount.



**Current and projected headcount in 2018 per campus**

Campus	2013	2018
Kosrae	243	212 (13% less)
National	1017	1136
Pohnpei	672	898
Chuuk	319	296 (7% less)
Yap	195	263

The headcount number outlined in the table above is used within the individual Part 3 campus reports to benchmark the provision of toilets, learning resource center and computer lab space and parking stalls. This has led to a recommendation at some campuses (Yap, Pohnpei and National in particular) to increase the amount or size of some facilities and because of this has triggered a new building project.

## 2.4 Buildings Requiring Replacement Based on the Asset Condition Assessment

As outlined in 2.1.2 Project identification, the findings of the Asset Condition Assessment has informed the project prioritization. Out of the 68 buildings surveyed, 11 have been identified as having a poor grading with an added overlay of a poor structural condition grade. Repairs to the structural elements becomes an issue, particularly for teaching spaces without the availability of spare buildings to move into while these buildings undergo repair.

The following buildings have been identified as having a poor structural or building fabric grade:

Campus	ID	Building Description
National	L	FSM- China Friendship Sports Center
Pohnpei	B	Bookstore
	C	I.C Building/ Electronics Classrooms
	D	Classroom Building A
	K	TSP/ UB Building
Chuuk	D	Campus Dean's Office
	J	Student Center
Kosrae		Nil
Yap	A	Administration Building
	C	CRE building
	G	Vocational building
FSM-FMI	F	Security Post

The location of these buildings on each campus is shown on the Building Condition Assessment Summary Plans in Chapter 8 of this report.

The following buildings have been identified as having a disproportionate operational and maintenance cost (when compared to their estimated replacement cost).

Campus	Building or Asset	Replacement Cost (as % of Campus Assets) (A)	Operational Cost (as % of Campus Operational Cost) (B)	Difference (C= B - A)
National	Gymnasium	19%	31%	+12%
Pohnpei	UB & TSP	17%	49%	+32%
Chuuk	Midtown (off campus)	6%	20%	+14%
Kosrae	Site infrastructure	17%	25%	+8%
Yap	Vocational Building	10%	29%	+19%
Yap	Administration Building	14%	22%	+8%
FMI	None identified			

The above table assumes that the proportional ratio between the replacement cost and the operational cost should be equal. Any discrepancy in this ratio highlights where additional operational cost is being incurred. Refer to Appendix C in the campus specific reports for more detail on the above.

In comparison (to the table above) the new buildings on the Yap campus (as shown in the table below) highlight the savings in operational costs that new and appropriately designed buildings can deliver for COM-FSM.

Campus	Building or Asset	Replacement Cost (as % of Campus Assets) (A)	Operational Cost (as % of Campus Operational Cost) (B)	Difference (C= B - A)
Yap	Student Center (New)	15%	8%	-7%
Yap	Classroom Building (New)	18%	8%	-10%

## 2.5 Proposed Removal, Relocation and/or Replacement of Existing Facilities Informed by the Spatial Review

The outcome of the spatial review is the identification of new building projects. In this Facilities Study the following buildings have been identified for removal in the next 5 years either because of their location (they need to be removed for access or there is a new building to be located in their place) or their shape and size means they no longer provide a functional use.

Campus	ID	Building Description	Reason for removal
Kosrae		Toilet block next to Classroom Building J	No longer used as a toilet block
	C	Faculty Building	Open up the center of the campus

The remaining buildings on each site will require the deferred renewals and maintenance to be addressed so they will not degrade further. This is discussed in the Asset Condition Assessment in Chapter 8 of this report.

The following new buildings have been identified through the spatial review for development in the next 10 years (up to 2023). A further iteration of the table below is required based on the available funding.

### Ten year project list 2013 - 2023

Campus	Plan ID <sup>1</sup>	Building Description	Reason for identification
National	1	Health Clinic	COM-FSM initiative following the move of Public Health to southern boundary and potential to interface with the community
	2	New student center	Provide a center for students on campus
		Covered area for residential students	Provide a center for students on campus, meeting place
		Contemplation building	Identified as a need through the focus groups
Pohnpei	1	New technical education classroom (previously called Voted)	Support the 2 year Board of Regents Action Agenda's Emphasis Plan to prioritize the provision of dedicated classroom space for Vocational Education
	2	New multipurpose technical education building	

<sup>1</sup> Referenced on the Part 3 report, Chapter 1.2 plan

	3	New learning resource center`	Provide adequate space for increased student numbers
	4	Multipurpose technical education building on the main road frontage (previously called Voced)	Support the 2 year Board of Regents Action Agenda's Emphasis Plan to prioritize the provision of dedicated classroom space for Vocational Education
Chuuk – existing site	A	CRE Extension	Provide space for existing extension offering currently lacking dedicated space
Chuuk - Nantaku site	1	Administration and faculty	Provide the facilities required on the new site for the projected student numbers
	2	Student services, teaching spaces	
	3	Teaching spaces, LRC and computer lab	
	4	Maintenance facility	
	5	CRE building	
Kosrae	1A	New multipurpose building (Stage 1)	Provide for centralized services and a covered student meeting space
	1B	New multipurpose building (Stage 2)	Expand the building to meet service requirements for an increased roll
	2	Maintenance facility	Replacement and provision of storage facility
Yap	1	Vocational education building	Support the 2 year Board of Regents Action Agenda's Emphasis Plan to prioritize the provision of dedicated classroom space for Vocational Education
	2	Administration and faculty building	New building replacing the existing that has issues with floor and walls
	3	CRE Extension building	Space not currently provided for on site
	4	LRC and computer lab	Provide adequate space for student numbers
FSM-FMI	1	Residential building	Allow for expansion of administration functions in the administration wing by providing a separate residence
	2	Classroom/ study building	Enable the existing computer lab to expand and allow for group study

	3	Engineering shop	Provide for adequate space and ventilation
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The following new buildings have been identified through the spatial review for development after 2023:

Campus	Plan ID <sup>2</sup>	Building Description	Reason for addition
National	3	New Marine Science/ Applied research	Provide for degree courses in marine science and support research by having a dedicated facility
Pohnpei	5	Two storey administration and classroom building	Provide for replacement classrooms and improved entrance facility – front face to the campus
Chuuk			
Kosrae	3	CRE building	Replacement building
	4	LRC building	New facility and allow for expansion of functions in the multipurpose building
	5	Multipurpose sports/ drama building	Support educational aims
Yap	5	CRE - Research	Replacement based on the existing building condition assessment
	6	New classroom block	Additional classrooms dependent on increased student numbers
	7	Gymnasium or covered court	Provision of a recreational amenity
FSM-FMI		Covered recreation area	Provision of an all weather recreation facility

<sup>2</sup> Referenced on the Part 3 report, Chapter 1.2 plan

## 2.6 Consolidated Campus Project List

Additional to new buildings on each campus is the refurbishment of existing buildings, infrastructure and open space projects. The full consolidated campus project list developed for the Facilities Study is outlined in the following table.

	<b>NATIONAL CAMPUS</b>	
	<b>5 year period to 2018</b>	
1	Secure IT facilities with server room and backup area	\$40,000
2	Public community health interface building	\$1,510,000
3	Toilets at MITC building - replace darkroom area with wc facilities accessible for weekend use	\$35,000
4	Rationalize the science storage space to include project space through replanning layout of the existing space	\$50,000
5	Rationalize the administration area through the review of area used for storage of files and alternative means of storage - moveable shelving, digitized files	\$50,000
6	Upgrade the gymnasium building to provide facilities required for next 10 years - i.e. space cooling, water storage, solar panels	\$400,000
7	Increase disabled access across the site - access to both administration levels	\$170,000
8	Consolidate bookstore and bookstore warehouse area	\$20,000
9	Relocate security within the campus (previous bookstore area)	\$5,000
10	Provide a covered pick up/ drop off space for taxis/ buses at main entry	\$20,000
11	New two level student services building	\$2,909,999
12	Landscape work, paths in connection with the new student services building	\$265,000
13	Remove offices on the side of the dining hall and increase dining hall space	\$20,000
14	Combined covered area for residential students	\$115,000
15	Full outdoor Basketball court	\$80,000
15a	Sewage leaching field	\$135,000
	<b>10 year vision to 2023</b>	
16	Quiet contemplation place for residential students - pastoral care	\$50,000
17	Marine science/ applied research building adjacent to the agriculture building	\$2,100,000
	<b>Long term vision - beyond 2023</b>	
18	Track and field / baseball facility including associated vehicle access and parking as well as pedestrian access	\$1,000,000

	<b>Further projects (not in order of priority)</b>	
	Solar power generation	\$500,000
	<b>POHNPEI CAMPUS</b>	
	<b>5 year period to 2018</b>	\$0
1	Create a vehicle route through the campus for service access and service with fire hydrants, consider demolition of end of classroom building to route access around existing mahogany trees. Seating areas for small group or individual study.	\$280,000
2	Relocate building K functions (TRIO program) to top floor of PSBDC	\$5,000
3	Demolish Building K	\$100,000
4	Demolish the Electronics building	\$20,000
5	New technical education classroom building along the boundary on the upper campus	\$1,360,000
6	New multipurpose technical education building along the boundary on the upper campus	\$1,525,000
7	Wifi connectivity	\$0
8	Site works associated with the new technical education buildings including rationalizing vehicle access, parking lot, signage, pedestrian connections, perimeter and structured planting	\$320,000
9	Create a public face for the upper campus with new signage and entry points	\$25,000
10	New facility for LRC	\$1,160,000
11	Demolish bookstore	\$30,000
12	Walkway connecting high level buildings to lower level access road, access route from elementary school to top of the site as an alternative access	\$275,000
	<b>10 year vision to 2023</b>	
13	Demolish carpentry and mechanical building	\$30,000
14	New multipurpose technical education building at the upper campus entry with area for maintenance and storage	\$765,000
15	Relocate Land Grant to top floor of PSBDC and remove COM Land Grant and relandscape front of PSBDC	\$175,000
	<b>Long term vision - beyond 2023</b>	
16	Turn around area in front of administration with a one way entry and exit	\$50,000
17	Two storey building at the front gate of the lower campus for administration and faculty	\$4,870,000
18	Demolish administration building	\$30,000



19	Increased carpark area in the lower campus and landscaped small study area, outdoor volleyball area, eating space	\$630,000
	<b>Further projects (not in order of priority)</b>	
	Solar power generation	\$500,000
	Works to increase drainage capacity - swales and subsoil drainage	\$150,000
	Fire fighting hydrants through site	\$170,000
	<b>CHUUK CAMPUS</b>	
	<b>5 year period to 2018 - assumes interim upgrades prior to move to a permanent site</b>	\$0
1	Extend campus to the north, fence perimeter and create a coral base carpark area with an entry and exit onto the main road	\$210,000
2	Restrict cars to campus, designate carpark area for visitors, create a central grassed area, 2 study huts on the coastal edge	\$100,000
3	Retrofit a classroom with a science bench and plumbing	\$80,000
4	Reroof student covered area and add roof ventilation	\$0
5	Upgrade wi fi	\$0
6	Extend CRE - extension building to main road	\$520,000
7	Landscaping (continuous line of hedges) along the road frontage and upgrade signage	\$20,000
8	Meeting room for student body meetings - review classroom use and retrofit within existing building footprint	\$5,000
9	Staff lounge - meeting place for all faculty - review classroom/ faculty space and consider conversion of one faculty office	\$5,000
10	Conference space set up with conferencing remote learning - review classroom utilization and convert classroom space to new function	\$0
	<b>7 year vision on the Nantaku site - to 2020</b>	\$0
11	Road connection to site	\$2,300,000
12	Site infrastructure services - water supply, site drainage, sewage disposal, electricity	\$3,250,000
13	On site roading infrastructure and form basketball hardcourt area	\$1,250,000
14	Building 1,2,3 - two level administration and classroom building and associated landscaping	\$10,575,000
15	Building 4 - CRE - research building	\$1,160,000
16	Building 5 - Maintenance building (at top of the site)	\$205,000
	10 year vision to 2030	\$0
17	Building 6 - two level classroom building dependent on roll number increase	\$4,235,000
18	Associated landscaping	\$135,000

	Further projects (not in order of priority)	\$0
	Solar power generation	\$500,000
	<b>KOSRAE CAMPUS</b>	<b>\$0</b>
	<b>5 year period to 2018</b>	
1	IT server in a secure environment in the existing administration building	\$40,000
2	Upgraded Wifi	\$0
3	Open sided shelters for charging electronics and outdoor study (4 off)	\$40,000
4	Consolidate student services functions in a multifunctional building - stage 1 two storey building	\$3,345,000
5	Site works associated with multifunctional entry building - carpark, streamside works along the length of the new building , landscaping, signage, pedestrian connections, perimeter and structured planting, clear view shafts to visitor centre	\$560,000
6	Recreational area - outdoor basketball/ volleyball space and associated landscape works	\$150,000
7	Relocate carpentry and other voced functions to eastern end of Block J away from the main entry and LRC and retrofit space to faculty and/ or administration functions	\$30,000
8	Demolition of the toilet block at the eastern end of Classroom Building J	\$5,000
9	Demolition of Faculty Building C and upgrade surrounding vehicle access and carpark	\$290,000
10	Demolition of Bookstore Building I and provide for a landscaped area (either active or passive recreation). Alternative is to remove portions of the walls to create an open air study area and solar charging station	\$110,000
	<b>10 year vision to 2023</b>	
11	Stage 2 of the entry multipurpose building with faculty and administration functions added to building	\$1,130,000
12	Relocation and fitout of specialized science classroom and general classroom into Block J	\$220,000
13	Pedestrian bridge across to southern streamside bank and level area for covered open sided multipurpose drama/ recreation space - ability to seat up to 300	\$1,050,000
14	New storage and maintenance building	\$385,000
15	Demolish existing maintenance office and building - landscape works along the streamside	\$150,000

	<b>Long term vision - beyond 2023</b>	
16	New CRE - extension building either at research building site or in the community interface activity zone	\$1,670,000
17	New Learning Resource Center and associated landscape works, pedestrian connections	\$2,525,000
18	Associated landscaping with the LRC - paths, shrubs, seating	\$560,000
	Further projects (not in order of priority)	\$0
	Provide facility for on site water supply	\$530,000
	Solar power generation	\$500,000
	Investigate and reroute power lines across the site	\$50,000
	Works to increase drainage capacity - swales and subsoil drainage	\$50,000
	<b>YAP CAMPUS</b>	
	<b>5 year period to 2018</b>	
1	Formed paths providing direct connection between buildings through the centre of the campus	\$65,000
2	Refit computer classroom for combined upward bound and computer lab	\$20,000
3	Access to boundary carpark - southern boundary	\$440,000
4	Fence around German tower if required	\$15,000
5	New VOCED building and maintenance facility	\$2,460,000
6	Create hard court area near Student Services building , 2 study huts and landscaping	\$40,000
7	Implement a landscape plan across the campus	\$265,000
	<b>10 year vision to 2023</b>	
8	Demolish computer lab building	\$30,000
9	New administration and faculty building on computer lab site	\$1,720,000
10	Demolish administration building	\$30,000
11	New LRC and computer lab on previous administration site	\$1,900,000
12	New CRE extension to CRE building	\$670,000
	<b>Long term vision - beyond 2023</b>	
13	Relocate hardcourt area	\$85,000
14	Additional new classroom block between student centre and classroom block	\$1,340,000
15	New gymnasium	\$1,930,000
16	New CRE - Research wing	\$1,120,000
	<b>Further projects (not in order of priority)</b>	
	Relocate power poles servicing other properties	\$50,000
	Solar power generation	\$500,000

	Works to increase drainage capacity - swales and subsoil drainage	\$50,000
<b>FSM-FMI CAMPUS</b>		
<b>5 year period to 2018</b>		
	Address provision of fire fighting facilities	\$165,000
	Building 1 - New duplex residence for instructors in the residential zone	\$840,000
	Relocate women's quarters into the north eastern end of Administration Building A and add conference room and administration office to area vacated by the residence.	\$40,000
	Remove wall between men's and previous women's quarters. Move men's quarters to the north and utilise the southern quarters as library study space	\$5,000
	Increase computer room to incorporate former library space in Building C	\$3,000
	Separate server room from IT office (within existing building envelope)	\$20,000
	Provide covered access over classroom doors to Building C, new cadet toilet block next to Seaman's shelter and rationalise location of the access path	\$60,000
	Upgrade below ground services - drainage and watersupply	\$200,000
	Storage for maintenance materials (potentially a container type facility)	\$10,000
	Address the current sewage system and leaching field	\$135,000
<b>10 year vision to 2023</b>		
	New classroom/ study space with covered access connecting to residential quarters	\$465,000
	Improve shop areas by constructing a stand alone engineering shop area	\$265,000
	New security post	\$30,000
<b>Long term vision - beyond 2023</b>		
	Covered recreation area (over basketball court) for drills	\$740,000
<b>Further projects (not in order of priority)</b>		
	Work with State Government to investigate rerouting the main road to the south of the classroom Building C	\$200,000
	Provide facility for on site water supply	\$350,000
	Solar power generation	\$500,000
	Works to increase drainage capacity - swales and subsoil drainage	\$100,000
<b>TOTAL</b>		<b>\$76,742,999</b>

## 2.7 Identified Funding Source

Known funding sources available to COM-FSM have been identified by the Project Control Group. As well as the known funding streams there are also potential funding streams. There is a need to identify funding for both new facilities as well as the renewal and maintenance of the existing facilities. A balance is required between the desire for new facilities and making sure the existing facilities are at a standard that enables the campus to function adequately.

### 2.7.1. Identified funding sources for capital works

We understand that there has been a previous budgetary commitment for capital improvement projects. Table 1 outlines the list of projects with estimated capital values submitted to FSM and OIA (US Office of Insular Affairs) provided by the PCG as an input to the study. We have taken this project list as an indication of the quantum of funding forthcoming as part of the Compact agreement. The final project plan developed as part of the Facilities Study incorporates the projects in Table 1 below that continue to be identified as those that will contribute to the future sustainability and educational direction of the College.

**Table 1: Outline of the current budget appropriation**

### COLLEGE OF MICRONESIA - FSM CAPITAL IMPROVEMENT PROJECT BUDGET PLAN FY 2009

**As of April 22, 2010**

Project Description	2005- to 2006	2007	2008	2009	2010	2011	2012	2013	TOTAL
Yap Campus Classroom & Student Center & Furnishing	2,200,000	Under Construction							
Yap VOCED	(Hold)								
Kosrae Campus Student Center		1,334,880							
Kosrae Campus LRC	(Hold)		1,085,830						
Kosrae VOCED	(Hold)								
Pohnpei Campus LRC	(Hold)			1,448,038					
Pohnpei Campus Classroom & Vocational Center				1,335,000					
National Campus Student Center					1,856,000				
Chuuk Campus Phase I	(Hold)					2,760,000			
Chuuk Campus Phase II	(Hold)						4,731,380		
Chuuk Phase III	(Hold)							1,595,000	
Natural Science Classroom & CRE									
<b>Total Project Cost</b>	<b>2,200,000</b>	<b>1,334,880</b>	<b>1,085,830</b>	<b>2,783,038</b>	<b>1,856,000</b>	<b>2,760,000</b>	<b>4,731,380</b>	<b>1,595,000</b>	<b>18,346,128</b>
<b>IMF</b>									<b>917,306.40</b>
<b>Budget Appropriation</b>	<b>1,830,000</b>	<b>1,500,000</b>	<b>2,350,852</b>	<b>2,397,956</b>					<b>8,078,808</b>

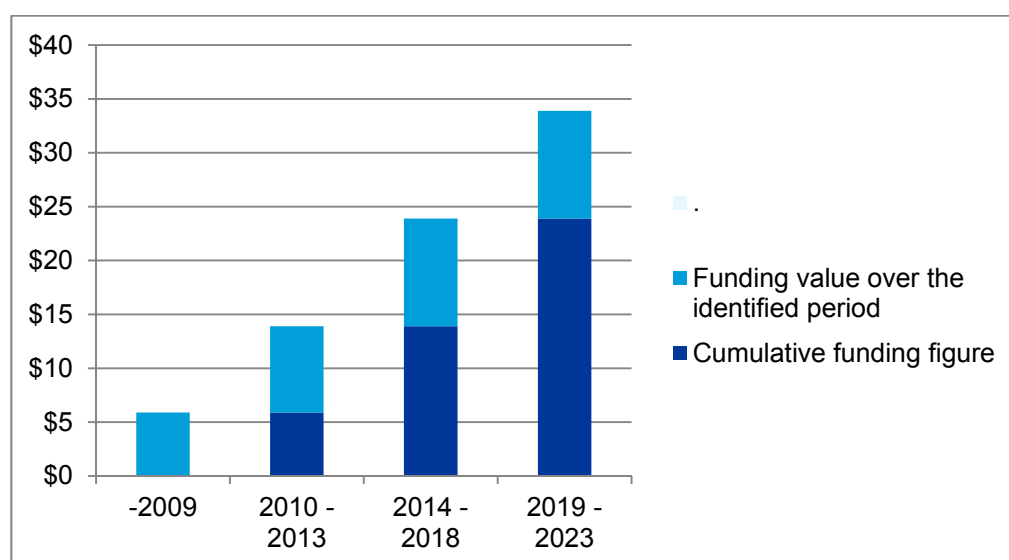
**Difference**      -370,000                      165,120      1,265,022      -385,082                                      (10,267,320)

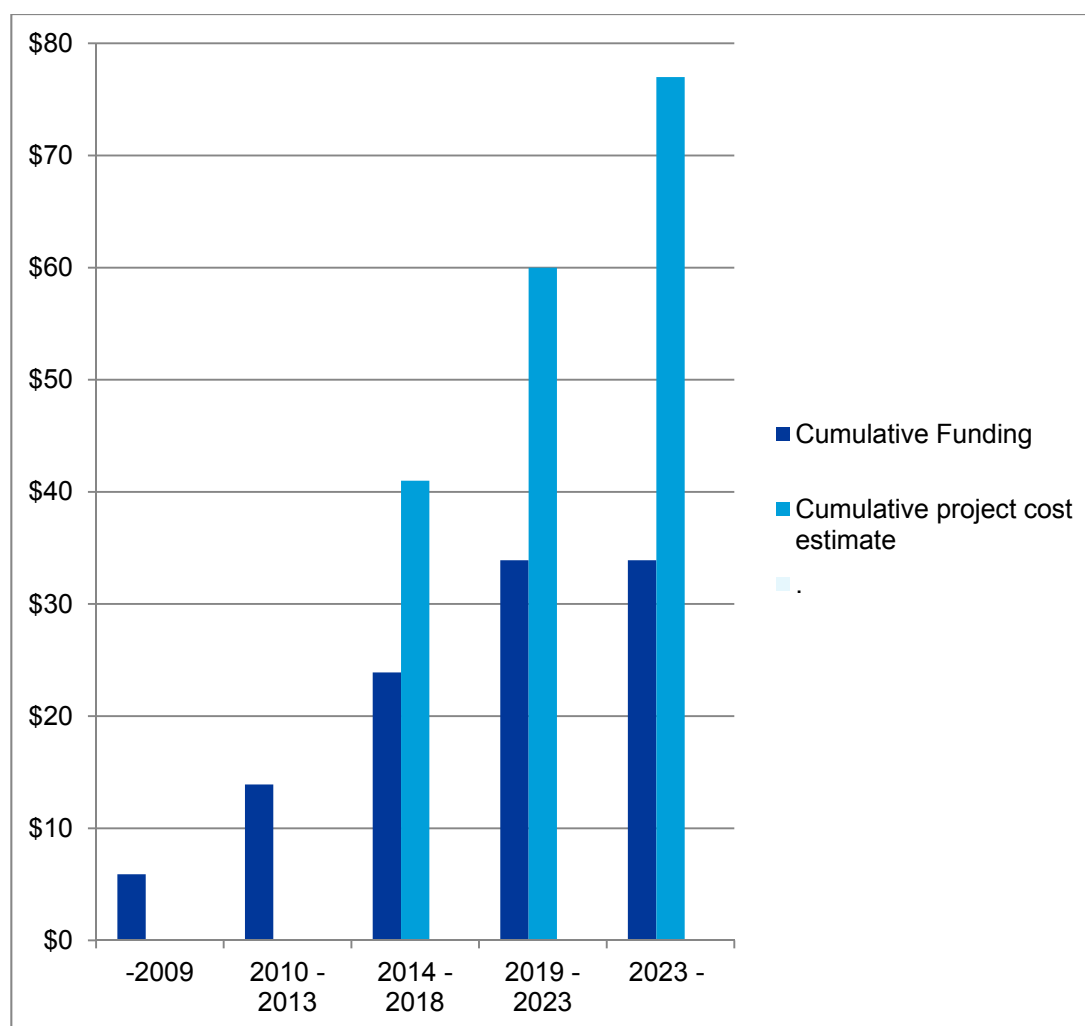
**Table 2: Cross reference of the appropriated amount to the FSM Public Law number**

Public Law Number	Fiscal Year	Amount				
PL11-9	2005	\$ 330,000.00	<b>Amount Appropriated</b>		\$ 8,078,817.00	
PL14-50	2006	\$ 1,500,000.00	<b>Amount Obligated</b>		\$ 2,200,000.00	
PL14-80	2007	\$ 1,500,000.00	<b>Balance</b>		\$ 5,878,817.00	
PL15-11	2008	\$ 2,350,852.00				
PL15-71	2009	\$ 2,397,965.00				
<b>TOTAL Appropriation</b>		<b>\$ 8,078,817.00</b>				

Note: PL13-35 FY2004 IDP budget of \$350,000 for Chuuk has been reimbursed to COM-FSM.

Table 3 summarises the anticipated Compact of Free Association, FSM Infrastructure Development Funds out to 2023. These figures have been used to inform capital project planning.

**Table 3: Anticipated Compact of Free Association, FSM Infrastructure Development Funds to inform capital project planning (assume \$2M US per year from 2010)**

**Table 4: Anticipated Compact of Free Association, FSM Infrastructure Development Funds versus facilities study rough order cost estimate**

### 2.7.2. Identified funding sources for maintenance and renewals

With the figure of \$3.3M for the periodic maintenance and renewal of building element requirements (including escalation) identified in the Asset Condition Assessment it is imperative to secure funding sources for this activity. This is required alongside funding for replacement buildings that have deteriorated beyond repair or are no longer effectively supporting educational outcomes.

### 2.7.3 Additional Potential Funding sources

The following additional funding sources and value are identified:

#### Physical Resources Contingencies Fund

On August 16, 2011, the President's Cabinet approved a Physical Resources Contingency Fund policy presented by the Vice President for Administrative Services. The policy called



for an initial allocation of \$500,000 from the fund balance and additional deposits of \$50,000 annually. The purpose of the policy is to ensure immediate access to a reliable and ongoing funding source to support facilities issues not funded through the annual operations budget.<sup>3</sup>

Further to this the following potential funding has been identified - the availability and scale of the following needs to be considered.

- Sustainable energy initiatives - capital projects
- Student facilities fee
- FSM state funding
- Education aid for capital projects
- Potential student volunteer labour (See Chapter 10.2 Optimised Maintenance Strategy)
- Any other known sources that can be identified by the PCG
- Current COM-FSM operations budget for maintenance (currently \$150,000)
- Current COM-FSM budgeted amount for renewals (currently advised by PCG set at \$350,000)

## 2.8 Connection to Facilities Planning and Financial Planning Discussed in the Integrated Educational Master Plan (IEMP) and Other Reports

This report, the Space Utilization and Facilities Master Plan Study, will inform the review of the Facilities component of the Integrated Educational Master Plan (IEMP). The IEMP was last issued in March 2013 and is due for review in 2018.

There is an issue to address in the financial plan regarding the operations and maintenance budget due to the scale of the renewals and maintenance budget identified as required in this study.

The integration of finances and the planning process has been raised in the following paper referenced in the IEMP, the *COM-FSM Quality, Sustainability and Success: A framework for Planning and Action*, written by President Joseph M. Daisy, EdD in April 2012.<sup>4</sup>

Step 3 (in italics below) in this paper outlines the importance of allocation of COM-FSM resources and integration of finances and the planning process.

*Engaging in a systematic and regular review of the allocation of resources to assure that we fulfill our mission and maintain institutional effectiveness. In light of the significant financial constraints we face as a result of the JEMCO decrement,*

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<sup>3</sup> College of Micronesia-FSM Mid-Term and Follow-Up Report (March 2013)  
[http://www.comfsm.fm/accreditation/2013/midtermreport/MidTerm\\_and\\_Follow\\_Up\\_Report\\_2013\\_Final.pdf](http://www.comfsm.fm/accreditation/2013/midtermreport/MidTerm_and_Follow_Up_Report_2013_Final.pdf), page 46.

<sup>4</sup> Daisy EdD, President J. M. (2012, April). *COM-FSM Quality, Sustainability, and Success: A Framework for Planning and Action*. <http://www.comfsm.fm/irpo/visioning-summit/White-Paper.pdf>

*more than ever before it will be essential for us to integrate our finances with our planning process. An ongoing, transparent financial planning process which informs our integrated planning process will enable us to prioritize our broad educational objectives and effectively deploy our human, physical, technological and financial resources.*

*○ Review immediately the alignment of our operational and financial plans for FY 2013 and if necessary re-prioritize these plans. We must also carefully review the financial resources in our plan implementation through FY 2015.*

*○ Institute program reviews for all non-academic areas beginning in FY 2013 and link the results of academic and non-academic program reviews to resource allocations that will achieve our institutional learning outcomes.*

A status report by Sandy Pond Associates called *COM-FSM Quality, Sustainability, and Success: a Framework for Planning and Action - Status Report*<sup>5</sup> in October 2012 measures the progress of the steps outlined in the White Paper, and outlines the work that remains.

For Task 1 for Step 3 the following was documented:

### **Step 3.**

**Engaging in a systematic and regular review of the allocation of resources to assure that we fulfill our mission and maintain institutional effectiveness. In light of the significant financial constraints we face as a result of the JEMCO decrement, more than ever before it will be essential for us to integrate our finances with our planning process. An ongoing, transparent financial planning process which informs our integrated planning process will enable us to prioritize our broad educational objectives and effectively deploy our human, physical, technological and financial resources.**

### **Task 1.**

*Review immediately the alignment of our operational and financial plans for FY 2013 and if necessary re-prioritize these plans. We must also carefully review the financial resources in our plan implementation through FY 2015.*

### **Work Completed**

- The college has created a five-year financial plan that is tied to the Integrated Educational Master Plan (IEMP).
- The FSM National Government has reiterated its commitment to the college, as evidenced by its approval to restore the first \$700,000 of the JEMCO decrement.

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<sup>5</sup> *Sandy Pond Associates, (October 2012) COM-FSM Quality, Sustainability, and Success: a Framework for Planning and Action - Status Report*<sup>5</sup>  
<http://www.comfsm.fm/accreditation/files/10-26/COM-FSM-Status-Report-on-White-Paper.pdf>

## Work Remaining

- The college ought to prioritize the plans within the IEMP through an approved governance structure.
- The college should determine the long-term level of financial commitment of the FSM National Government to the college as related to the remaining \$2.1 million JEMCO decrement.
- The college should consider establishing documented contingency scenarios for replacing the JEMCO decrement.

**Table 5: Financial Plan from the IEMP**

The Financial Data of the Plan					
College of Micronesia - FSM					
Five – Year Financial Plan 2013 to 2017					
By Functional Classifications					
	2013	2014	2015	2016	2017
<b>Projected operative revenue:</b>					
Tuition and fees	6,931,351	6,931,351	7,758,742	8,380,201	9,015,960
Increase in tuition and fees	-	618,873	621,482	635,759	-
Increase in average credit	-	208,518	-	-	-
Increase in enrollment	-	-	-	-	177,923
Other revenue	-	130,000	130,000	130,000	130,000
FSM - Education Sector Grant	3,100,000	2,400,000	1,700,000	1,000,000	1,000,000
FSM - General Fund	700,000	1,400,000	2,100,000	2,800,000	2,800,000
	<b>10,731,351</b>	<b>11,688,742</b>	<b>12,310,204</b>	<b>12,945,960</b>	<b>13,123,883</b>
<b>Projected operating expense:</b>					
Instruction	4,889,442	5,144,414	5,401,635	5,571,716	5,955,302
Student services	1,308,714	1,372,050	1,440,652	1,512,685	1,588,319
Academic support	951,002	958,552	1,048,480	1,100,904	1,155,949
Institutional support	1,453,381	1,526,050	1,602,354	1,682,471	1,766,594
Operations and maintenance	1,996,027	2,095,828	2,200,620	2,310,651	2,426,183
	<b>10,606,566</b>	<b>11,136,894</b>	<b>11,693,741</b>	<b>12,278,427</b>	<b>12,892,347</b>
<b>Projected operating earnings</b>	<b>124,785</b>	<b>551,848</b>	<b>616,463</b>	<b>667,533</b>	<b>231,536</b>

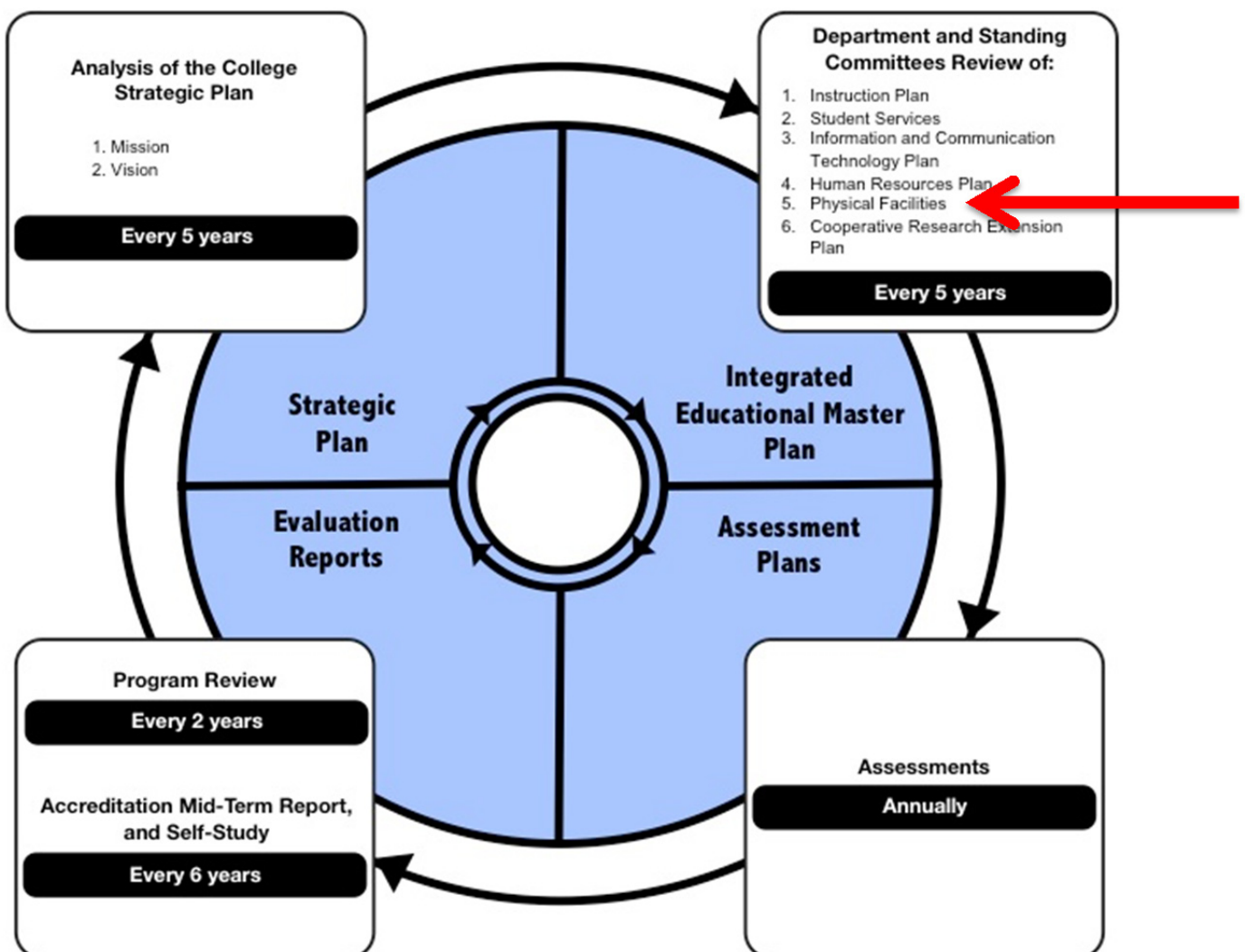
### 3 Space Utilization and Facilities Master Plan Study - Link to the Integrated Educational Master Plan and other COM-FSM reports

The outcomes of this Facilities Study will be used as a basis for energy conservation programs, remodelling of existing buildings or replacement of buildings as well as future financial forecasting.

These will be implemented through the Physical Facilities Plan (see red arrow on the diagram below copied from the IEMP Report) - one component of the Integrated Educational Master Plan.

Through the Accrediting Commission for Community and Junior Colleges (ACCJC) reviews for the Western Association of Schools and Colleges (WASC) it has been stated that there is a need to address the following recommendation:

**Recommendation 6: Physical Resources** “To fully meet this standard the college must develop a Facilities Master Plan that reflects the institution’s long term educational goals and plans and is linked to an identified, reliable and ongoing funding source that supports the total cost of ownership.(IIIB.2.a)”



The Assessment of COM-FSM's 2006 – 2011 Strategic Plan, a report submitted to President Joseph M. Daisy, EdD by Sandy Pond Associates outlines key strategic goals and objectives. This Facilities Study addresses some of these points as outlined in the table below:

**Strategic goal 3: Create an adequate, healthy and functional learning and working environment**

Objectives	Strategies	How this is addressed in the Facilities Study and/or implemented by COM-FSM
3A: Provide for adequate facilities to support a learning community	<p>3A1: Complete and implement the college's physical Master Plan in consultation with the FSM's Project Management Unit</p> <p>3A1a: Include accessibility issues in all design considerations</p> <p>3A1b: Include efficient use of power in all design considerations</p> <p>3A1c: Recognizes the history and culture of Micronesia in design and construction of facilities</p> <p>3A2: Develop and implement a landscape place for each campus that promotes a learning environment</p>	<p>COM-FSM on adoption of this Space Utilization and Facilities Master Plan Study</p> <p>Addressed in Part 2 – Common Campus Design Principles (6.4.2)</p> <p>Addressed in Part 2 – Common Campus Design Principles</p> <p>Addressed in Part 2 – Common Campus Design Principles</p> <p>Addressed in Part 2 – Common Campus Design Principles</p>
3B: Provide for maintenance and upkeep of grounds, facilities, and equipment	<p>3B1: Develop and implement a facilities and equipment maintenance program for the college</p> <p>3B2: Assess and improve existing facilities accessibility</p> <p>3B3: Ensure college facilities and grounds are clean and conducive to learning</p>	<p>COM-FSM Facilities Maintenance Staff informed by a maintenance plan</p> <p>Reviewed by building in the specific campus Master Plan reports – Part 3</p> <p>COM-FSM Facilities Maintenance Staff supported by the common design principles</p>
3C: Provide for a safe, secure and effective college environment	3C1: Development and implement internal security systems for each campus	COM-FSM Facilities Maintenance Staff supported by the common design principles

	3C2: Evaluate and improve facilities and grounds from a safety and security standpoint	Safety issues reviewed as part of the spatial review and the highest priority project item
	3C3: Develop and enforce policy on facilities use and management	COM-FSM Facilities Maintenance Staff
	3C4: Develop and implement infrastructure, security and transportation standard operating procedures for all campuses	COM-FSM Facilities Maintenance Staff

**Strategic goal 6: Ensure sufficient and well-managed fiscal resources that maintain financial stability**

Objectives	Strategies	How this is addressed in the Facilities Study and/or implemented by COM-FSM
6A: Enhance new and existing revenue resources to promote growth and increase cost effectiveness	<p>6A1: Redefine college budgeting strategies for the efficient use of resources and delivery of quality programs &amp; services</p> <p>6A2: Communicate the needs of the college effectively in support of capital campaigns</p> <p>6A3: Enhance college alumni programs and scholarship development</p> <p>6A4: Promote strategies that ensure the effective and efficient use of resources through reconciliation of accounts and tracking of performance against expenditures</p>	<p>COM-FSM supported by the Energy and Condition Assessment</p> <p>COM-FSM supported by the cost analysis and maintenance replacement program</p> <p>COM-FSM</p> <p>COM-FSM</p>
6B: Diversify resources of the College	<p>6B1: Establish and secure other funding relationships with other government agencies, foundations, grant sources</p> <p>6B2: Formalize and strengthen the alumni association and funding activities</p>	<p>COM-FSM</p> <p>COM-FSM</p>

6C: Budgeting and resource allocation	6C1: implement a budgeting process that links resource allocation with the college's strategic and short term planning	COM-FSM
	6C2: Establish long and short term institutional priorities to provide broad guidelines for budget allocations	COM-FSM
	6C3: Ensure that budget allocation are adequate to meet program and project needs	COM-FSM
6D: Develop and implement college sustainability plans that will lead to the careful stewardship of natural and man-made resources, saving of revenue, and enhancement of the college experience; serves as a model for the nation	6D1: Develop and utilize alternative sources of energy	COM-FSM informed by the energy review
	6D2: Implement best practices for energy conservation	Best practice guidance addressed in Part 2 – Common Campus Design Principles
	6D3: Develop college housing for off-island faculty	COM-FSM
	6D4: Develop incentives to bring back FSM citizens working and living abroad to work for the college	COM-FSM
	6D5: Ensure effective use of external funding through institutionalization of proven programs and services	COM-FSM



## 4 Facilities Masterplan Process

Beca International Consultants Ltd. were commissioned in May 2013 to prepare a Space Utilization and Facilities Master Plan Study (also referred to as the Facilities Study) for the College of Micronesia located across six campuses in the Federated States of Micronesia (COM-FSM). This study will inform the College's Facilities Master Plan. The steps in this study involved the establishment of a Project Control Group (PCG) with representatives from COM-FSM, Sandy Pond Associates and Beca International Ltd (Beca). Questionnaires and Requests for Information were prepared to capture existing information for each campus including building and site plans, energy usage data and any known campus and facilities issues. This was followed by site visits undertaken in June/July and August/ September to each of the campuses for the condition assessment and the spatial review by Beca technical staff. Site visits to each campus were undertaken separately by Sandy Pond Associates. The chapters within this study were developed with reviews by the PCG at key milestones.

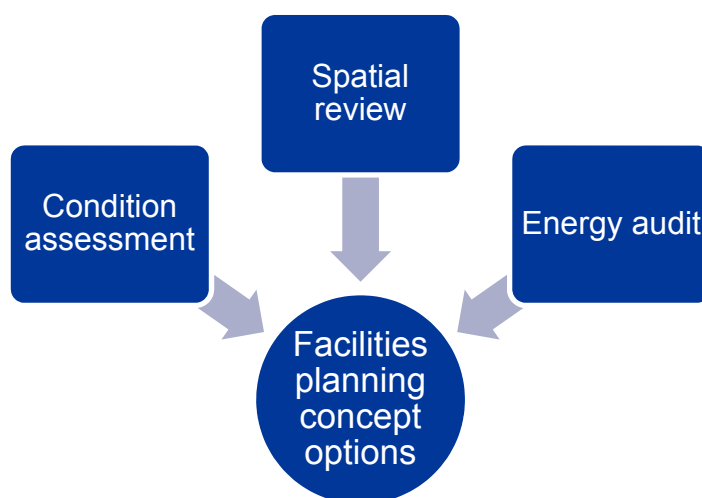
As outlined in the Determination of Future Space Needs in the Integrated Educational Master Plan:

*“The Facilities Master Plan will provide a comprehensive review that evaluates and prioritizes the necessary facility improvements that respond to the college’s forward strategic direction and links to the Integrated Educational Master Plan. This direction is outlined in the COM-FSM Quality, Sustainability and Success: A framework for Planning and Action, April 2012 and the Facility and Campus Environment Plan, January 2011 with goals being to:*

- Increase rigor in decision making regarding new facilities construction
- Ensure adequate maintenance of college facilities
- Provide grounds and campus environments conducive to learning.

### 4.1 Work Streams

The following three work streams provided input into the development of the Space Utilization and Facilities Master Plan Study:



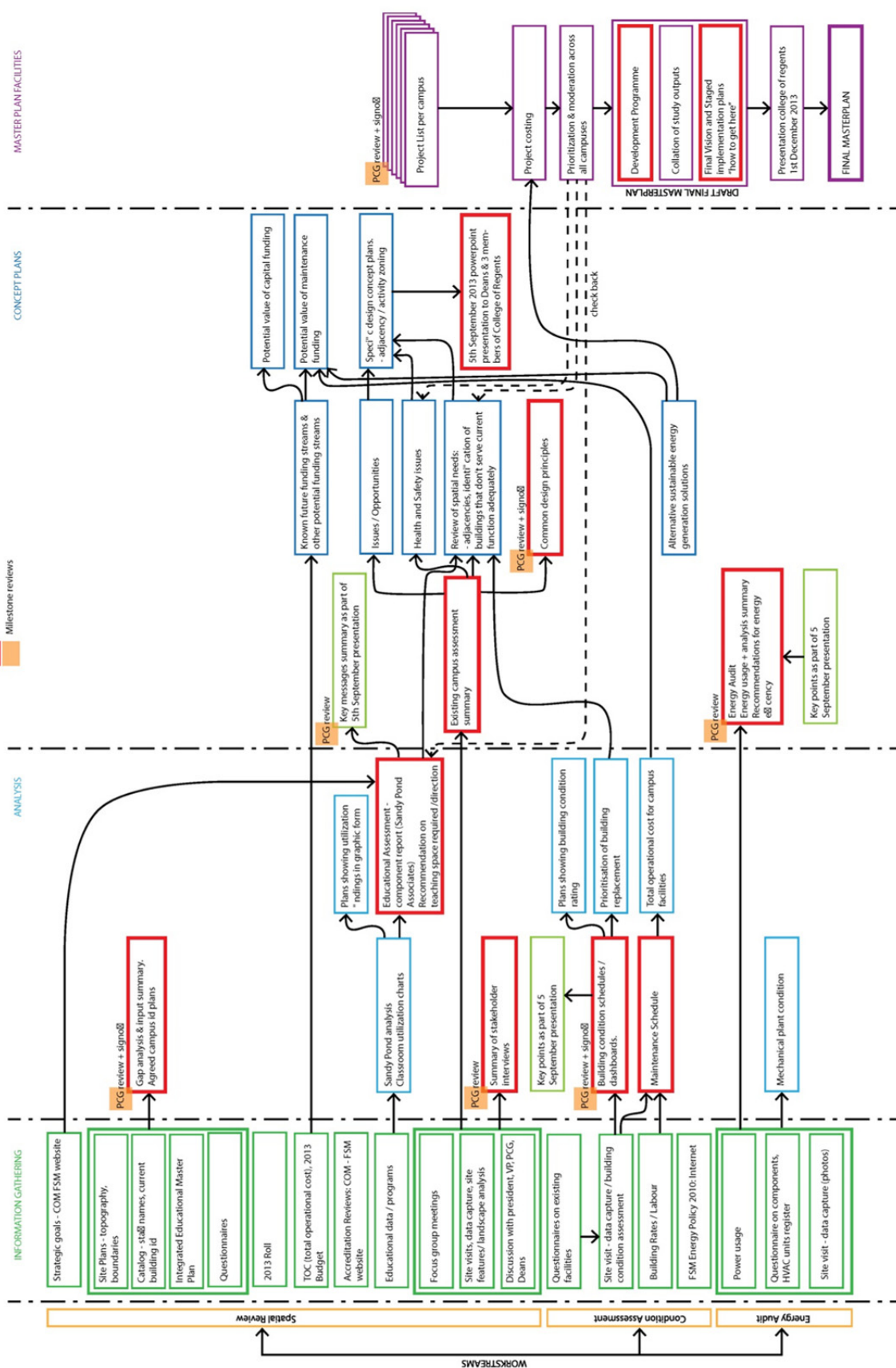
The output from each of these work streams informed the Facilities Study concept process which reviewed options for site development with the Project Control Group. Following the selection of the

preferred option a series of campus specific projects were identified, costed and programmed. A summary of this for each campus is provided in the respective Part 3 detailed campus reports.

The general tasks undertaken in each of the work streams are summarised on the next page along with their location in the Space Utilization and Facilities Master Plan Study.

Spatial Review	Condition assessment	Energy Audit
<ul style="list-style-type: none"> <li>• Educational assessment component - classroom utilization study (Part 2 - Chapter 6)</li> <li>• Spatial analysis following site visit (Part 3 - specific campus reports)</li> <li>• Focus group input (Part 3 - specific campus reports)</li> <li>• Common campus design principles (Part 2 - Chapter 7)</li> </ul>	<ul style="list-style-type: none"> <li>• On site review of existing buildings and infrastructure</li> <li>• Maintenance plan</li> <li>• Both in Part 2 - Chapter 8 and Part 3 - specific campus reports</li> </ul>	<ul style="list-style-type: none"> <li>• Review combining site observations and supplied energy use data</li> <li>• Both in Part 2 - Chapter 8 and Part 3 - specific campus reports</li> </ul>

A series of feedback loops, deliverables and milestone reviews were completed through the development of the COM-FSM Space Utilization and Facilities Master Plan Study. These are captured in the following methodology diagram.



## 5 Gap Analysis and Input Summary

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A Gap Analysis and Input Summary was prepared in Phase 1 of the study, the Information Gathering and Analysis phase for review by the Project Control Group.

The purpose of the gap analysis process was to identify the level of existing information available, information gaps and further information required. The Gap Analysis and Input Summary was issued on 5<sup>th</sup> August 2013 and approved with review comments from the PCG on the 17<sup>th</sup> October 2013.

The Gap Analysis and Input summary is contained in Appendix A.



## 6 Summary of Classroom Utilization Study

### 6.1 Analysis of Classroom Utilization Rates

Section I deals primarily with “institutional capacity” versus “need” to assess the utilization of classroom space.

#### A. Five Year Trend Analysis Methodology

The Five Year Trend Analysis uses concepts common to the American Association of Collegiate Registrars and Admissions Officers (AACRAO). Reference is made to the definitive work by C. James Quann and Associates, Admissions, Academic Records, and Registrar Services (San Francisco: Jossey-Bass, 1979).

The Classroom Utilization Study presents a five (5) year trend analysis of space utilization across the institution. Space utilization must account for maximum capacities. The enrollment measure used is headcount rather than full time equivalents (FTEs)<sup>6</sup> because each student (no matter what proportion of an accounting FTE he or she represents) must have space in a class. Fall enrollments are used because they are usually higher than spring enrollments and consequently a better measure of capacity.

Typical measures of classroom utilization take into account scheduling during normal teaching hours (example Monday through Friday 08:00 to 17:00 hours). This analysis does make use of evening classroom use, which (based upon the examination of COM-FSM's published class schedules) does not appear to be significant. Normally, classrooms lie vacant or are given over to other uses during these times. For utilization purposes, this represents excess capacity that can be pressed into service during times of high enrollment. In the five year study period there is no evidence of a current or historic need for such use.

During the period of the study 81 rooms were scheduled for the conduct of classes. Some were used only once or twice. Some are no longer in use. It is understood that in 2013, as in other previous years, some rooms may have come into service or gone out of service. Classroom utilization charts for each classroom in the study are provided in Appendix B.

The corresponding data tables for each year are in Appendix C.

#### B. Classroom Utilization as a Function of Capacity

Three (3) measures are used in this study to examine classroom capacity:

- distribution by utilization classification
- longitudinal utilization rate
- distribution and central tendencies of classroom utilization

Within these parameters, classrooms that are in use 75% (or more) of scheduled class times is deemed “high” (alternatively “at capacity”). Classroom use between 66.7% and 74.9% is considered “moderate use.” Classrooms between 50% and 66.6% are “low use” and those below 50% are considered “underutilized.”

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<sup>6</sup> FTEs are, however, used in this study for enrollment analyses and projections as a point of comparison for headcount data.

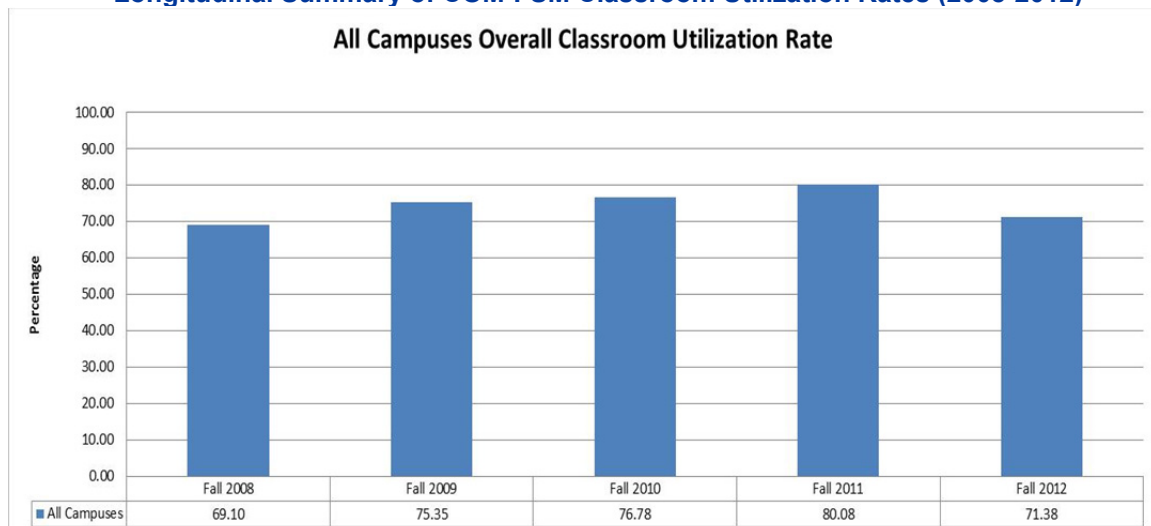
Utilization Classification Method: Table I.B.1 illustrates the pattern of classroom use during five year period of the study using the utilization classification method. One major observation is that over time approximately 45% of classrooms have fallen into the “low” or “underutilized” categories, while 35% have been utilized “at capacity.” **This utilization classification analysis suggests that COM-FSM as a six-campus system has adequate classroom capacity** for its regular college programs given their historic enrollment and classroom use patterns.

**CHART I.B.1**  
**Summary COM-FSM Classroom Utilization Classification (2008-2012)**

Utilization Levels	All Campuses
high (>75%)	35%
moderate (>66%)	21%
low (>50%)	30%
underutilized (<=50%)	15%
<b>Total</b>	<b>100%</b>
<b>Total Number of Rooms</b>	<b>81</b>

Longitudinal Utilization Method: Analysis of cumulative classroom use employing **longitudinal utilization rate method (illustrated in Chart I.B.2)** supports a conclusion of a “moderate-to-high” capacity usage – ranging from 69%-80% between 2008 and 2012 – with a peak utilization rate in 2011<sup>7</sup>.

**CHART I.B.2**  
**Longitudinal Summary of COM-FSM Classroom Utilization Rates (2008-2012)**



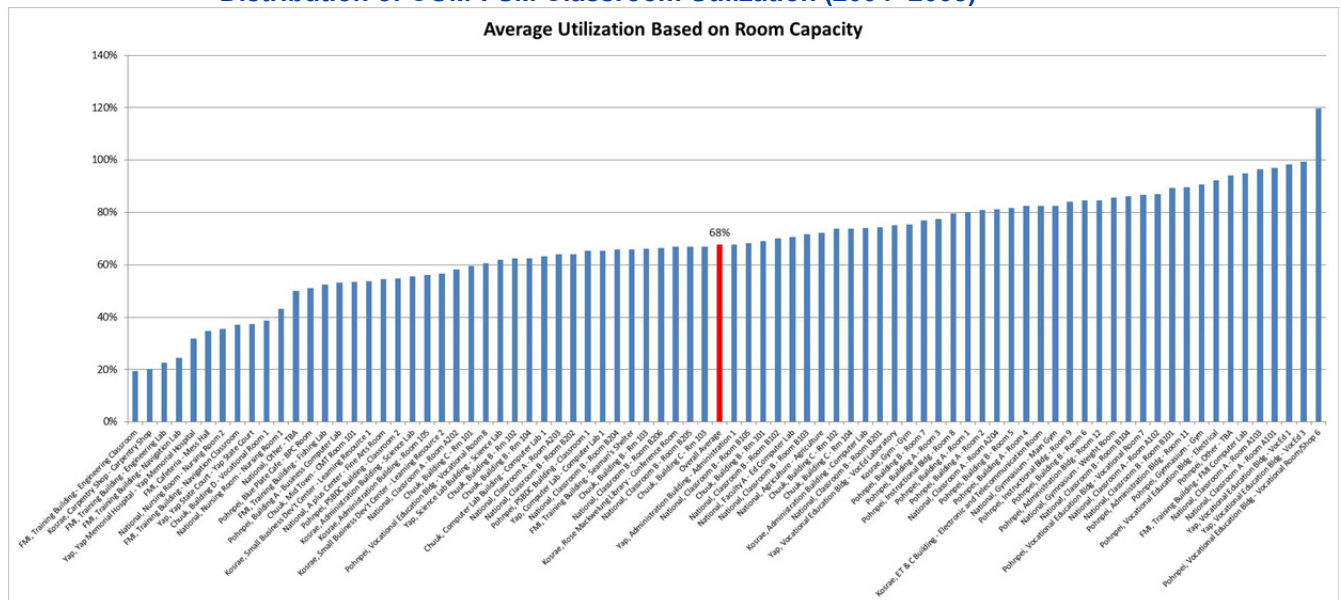
<sup>7</sup> Subsequent data available in Fall 2013 suggests a continued declining utilization rate, affirming 2011 as a peak, rather than an outlier year.

Distribution and Central Tendency Method (see Chart I.B.3 – next page): When viewed collectively as a histogram, the frequency distribution of classroom utilization across COM-FSM's six campuses over a five year period yields both average and mean utilization rates at 68% – again representing an overall **“moderate-to-high” utilization rate of classroom space across the six-campus system using the Distribution and Central Tendency Method.**

This presentation format also allows a “quick glance reference” for classroom-by-classroom comparison of utilization rates across the system campuses.

**Finding #1: the six campus system stands in the “high moderate” range (74.99% utilization upper limit) within the five year study period. This represents a near optimal positioning in terms of effective use of existing capacity while allowing adequate room for modest expansion over a ten year planning horizon.**

**CHART I.B.3**  
**Distribution of COM-FSM Classroom Utilization (2004 -2008)**



### C. Enrollment Trends and Projections

Over time classroom utilization is driven primarily by institutional enrollment. The Classroom Utilization analysis method in Section B: Classroom Utilization as a Function of Capacity represents current and historic use. Projections of large-scale enrollment trends into the future to inform planning decisions can be accomplished through enrollment trend analysis.

The Enrollment Projection Methodology uses a ten-year basis (2004-2013) including both headcount and FTE data to create a trendline. Trendline projection models use a “best fit” analysis (see Chart I.C.1 on the next page) and show a very limited rate of total enrollment growth through AY 2023-24.



COM-FSM planning projections call for flat growth through AY 2015-16, followed by 2% growth through AY 2017-18<sup>8</sup>. National demographic projections tend to support the “no growth” scenario<sup>9</sup>. Therefore the “best fit” trendline analysis appears to represent the upper limit for facilities’ needs during the ten-year projection horizon.

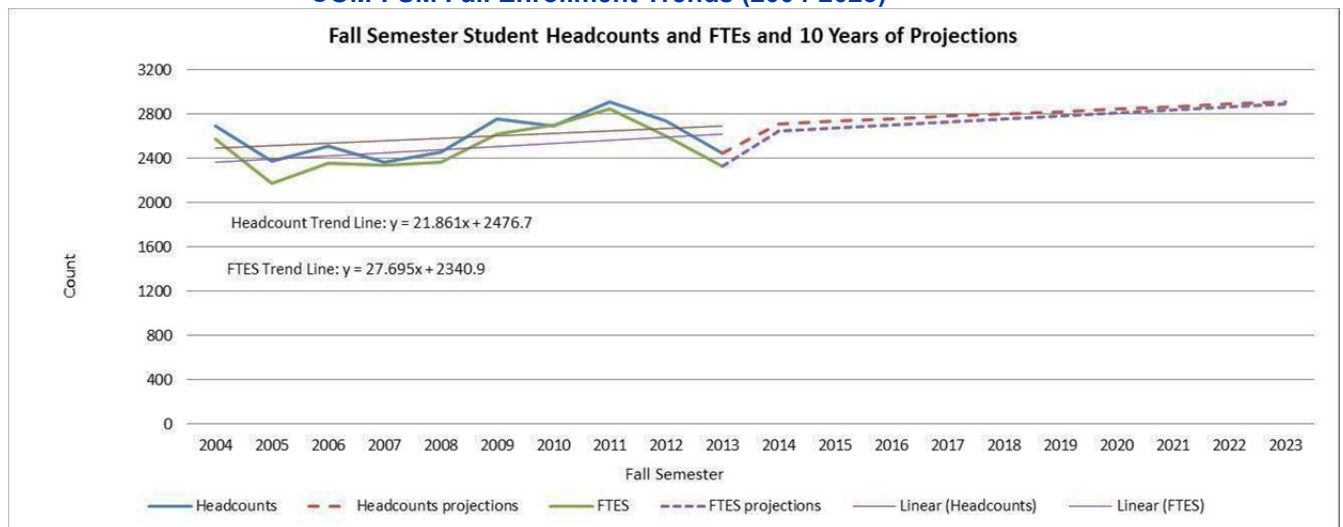
In this model enrollment throughout the six campus system will stay within the historic usage range throughout the ten (10) year projection window, not achieving the Fall 2011 high of 2913 headcount students until 2023. Indeed, a return to 2011 levels alone will require a 19% increase in enrollment. This suggests that the classroom utilization rate of 80.8% shown in the longitudinal analysis represented in Chart I.B.2 may represent the “high water mark” of overall classroom utilization through 2023.

**FINDING #2: Overall classroom need as measured by projected enrollment changes throughout the COM-FSM six-campus system is relatively flat within the ten year horizon (2014-2023). This suggests little need to increase overall institutional classroom capacity on the basis of any foreseeable enrollment trend.**

**FINDING #3: Across the 6 campus system COM-FSM has adequate overall classroom capacity through 2023 given its historic enrollment and classroom use patterns.**

3.1 Consideration should also be given as to how facilities on less fully utilized campuses could be used to provide a “relief valve” for selected programs and student populations on more heavily utilized campuses. This is especially true where two campuses are located on one island and additional capacity is needed (see 6.1.D, below, for discussion of Pohnpei and Yap).

**TABLE I.C.1**  
**COM-FSM Fall Enrollment Trends (2004-2023)**



Semester	Fall 2004	Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023
Headcount	2696	2379	2513	2366	2455	2758	2699	2913	2744	2446	2717	2739	2761	2783	2805	2826	2848	2870	2892	2914
FTE	2577	2176	2357	2342	2367	2626	2707	2845	2602	2332	2775	2815	2855	2895	2367	2626	2707	2845	2602	2332

<sup>8</sup> College of Micronesia-FSM, *Five-Year Financial Plan Summary* (August, 2012)

<sup>9</sup> College of Micronesia-FSM, *Factbook* (2013)

#### D. Campus-by-Campus Observations

Findings across the six-campus system may not be consistent from campus to campus, however. This section will provide a high-level overview of campus-to-campus variations from the broader norm. More detailed analysis of each campus will be provided in the appropriate Campus Volumes, Part 3 – Detailed Reports

Analysis by the Utilization Classification methodology (Table I.D.1) illustrates the distribution throughout campuses and shows the important variations which merit special consideration at the Pohnpei, Chu'uk, and FMI campuses.

**Table I.D.1**  
**Distribution of COM-FSM Classroom Use by Utilization Classification (2008-2012)**

Utilization Levels	Chu'uk	FMI	Kosrae	National	Pohnpei	Yap	All Campuses
high (>75%)	0%	13%	11%	33%	76%	25%	35%
moderate (>66%)	36%	0%	33%	33%	0%	25%	21%
low (>50%)	55%	25%	44%	21%	24%	25%	30%
underutilized (<=50%)	9%	63%	11%	13%	0%	25%	15%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total Number of Rooms</b>	<b>11</b>	<b>8</b>	<b>9</b>	<b>24</b>	<b>21</b>	<b>8</b>	<b>81</b>

A campus-by-campus enrollment analysis yields trends at the National campus and the State campus at Pohnpei which suggest slightly steeper growth trends than the six-campus system, but they are still within the historic usage range projections. The State campuses at Kosrae and Yap fall within the system's historic range through the next ten (10) years. Enrollment trends for the State campus at Chu'uk and the FMI campus show no projections for overall enrollment growth.

The Pohnpei State Campus shows very high utilization rates (76% in the "high utilization" range and 0% in the "underutilized" range -- indicating capacity use) which strain current program use and limit capacity for future growth. "Best fit" trendline analysis of enrollment suggests that the Pohnpei campus may return to 2011 enrollment levels as early as 2017.

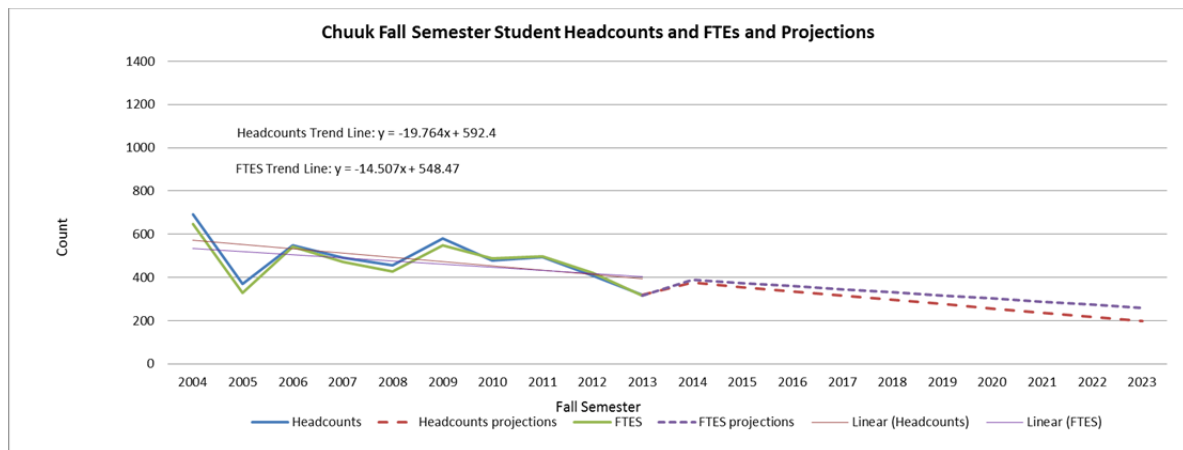
Given the Pohnpei State Campus' role in vocational education, which the board has prioritized in its Two-Year Action Agenda, special consideration should be given to the capacity of the Pohnpei Campus facilities to handle even modest future growth. As a measure of expediency while longer term solutions are explored, it may be possible for certain support courses to be offered at the National Campus.

**Table I.D.2**  
**Pohnpei Campus Fall Enrollment Trends (2004–2023)**

Historic Enrollment										
Semester	Fall 2004	Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013
Headcount	567	583	620	608	642	712	742	845	771	672
FTE	571	559	553	583	620	669	721	770	671	586
Projected Enrollment										
Semester	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023
Headcount	805	828	852	875	898	922	945	968	992	1015
FTE	713	728	743	758	773	788	803	818	833	848

The Chu'uk Campus has experienced less robust enrollment during the study period – likely in-part due to on-island competition from Caroline College and Pastoral Institute (an offshoot campus of Hawaii-based Chaminade College). Given the lease status of the Chu'uk facility, careful thought should be given to the size and scope of projected new or renovated construction. The Chu'uk Campus has great capacity serve as a resource for the six-campus system during periods of enrollment growth.

**Chart I.D.3**  
**Chu'uk Campus Fall Enrollment Projections (2004–2023)**



By the nature of its programs, which tend to be short term and intensive, the FMI Campus is an outlier for utilization analysis (Table I.D.1). The opportunity represented by this campus' capacity for offering specialized technical programs, developing specialized immersion programs, and hosting visiting scientific and academic interests ought to be more fully developed and explored.

### Special Considerations – Vocational Education

The high utilization rates on the Pohnpei campus observed in Table I.D.1 and Chart I.B.3 are driven by the demands of vocational education – especially the need for dedicated space. Given the Pohnpei State Campus' role in vocational education, which the board has prioritized in its Two-Year Action Agenda, special consideration should be given to the capacity of the Pohnpei campus facilities to handle even modest future growth.

Additionally, the Yap State Campus shows evidence of high utilization for its vocational education spaces.

**FINDING #4 Given the Board of Regents Two-Year Action Agenda's emphasis on vocational programming, dedicated classroom space for Vocational Education should receive priority attention in facilities planning.**

## 6.2 Summary

The six campus system stands in the “high moderate” range within the five year study period. This represents a near optimal positioning in terms of effective use of existing capacity while allowing adequate room for modest expansion over a ten year planning horizon.

Utilization Classification Analysis suggests that COM-FSM as a six-campus system has adequate classroom capacity for its regular college programs given their historic enrollment and classroom use patterns.

Longitudinal Utilization Analysis supports a conclusion of a “moderate-to-high” capacity usage with a peak utilization rate in 2011.

Distribution and Central Tendency Analysis describes a “moderate” utilization rate of classroom space across the six-campus system.

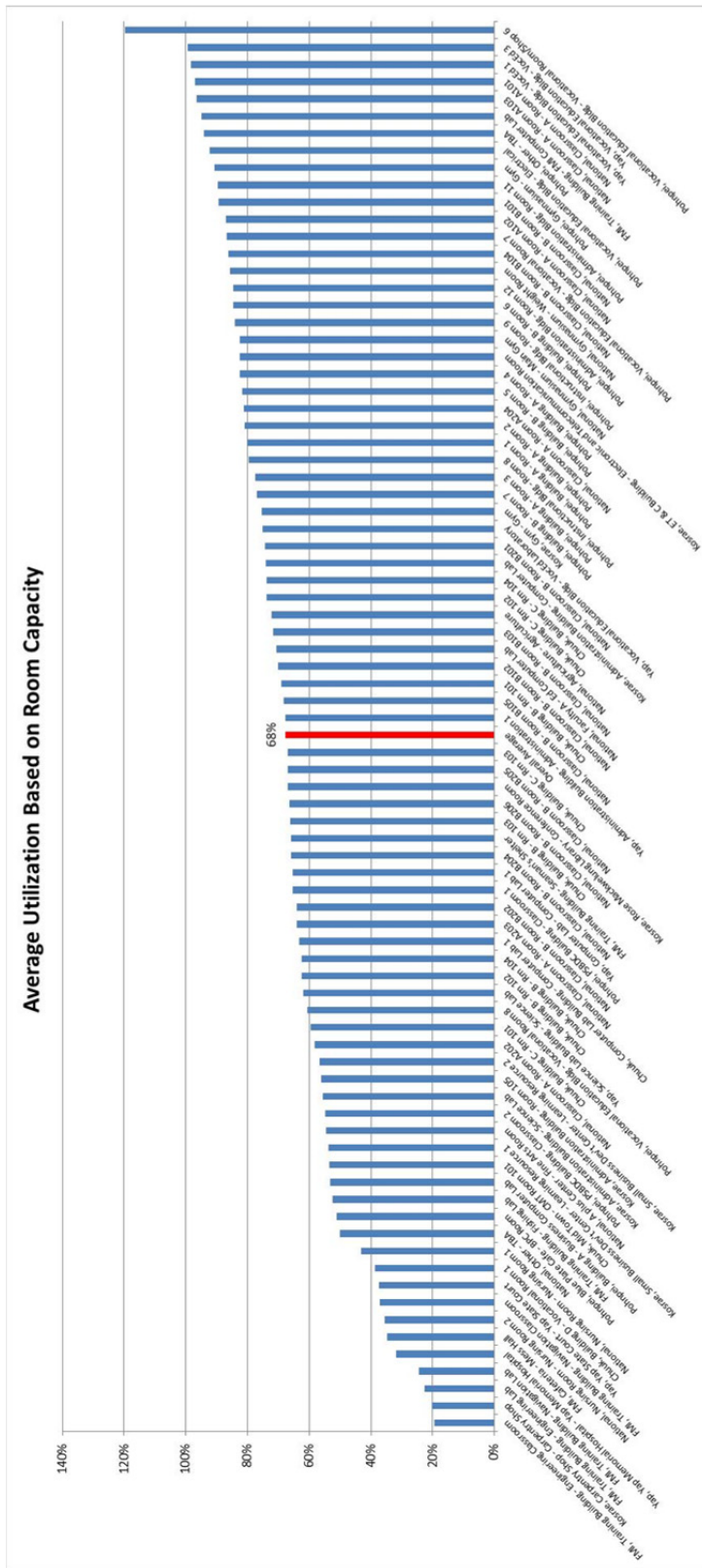
Classroom utilization rates at COM-FSM show a relatively high inelasticity compared to enrollment within the study period – a product of moderate-to-high capacity. Since the range of classroom utilization in the five (5) year study lies within the ten (10) year enrollment range, capacity can be projected forward for ten (10) years for planning purposes with a relatively high degree of confidence.

Overall classroom need as measured by projected enrollment changes throughout the COM-FSM six-campus system is relatively flat within the ten year horizon (2014-2023). This suggests little need to increase overall institutional classroom capacity on the basis of any foreseeable enrollment trend. Across the 6 campus system COM-FSM has adequate overall classroom capacity through 2023 given its historic enrollment and classroom use patterns.

Given the Board of Regents Two-Year Action Agenda's emphasis on vocational programming, dedicated classroom space for Vocational Education should receive priority attention in facilities planning.

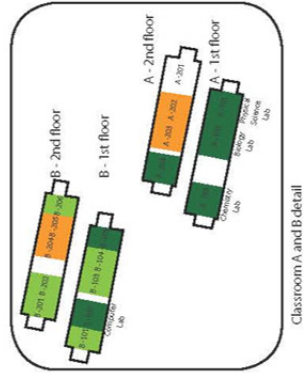
Findings across the six-campus system show campus to campus variation around the six-campus system norms. The National, Kosrae, and Yap campus follow the broad system trends. The Pohnpei, Chu'uk, and FMI campuses merit special consideration due to their unique circumstances. Classroom utilization on each campus is summarised in the following plans and is further discussed in the respective campus Part 3 – Detailed Report.

**CHART I.B.3**  
**Distribution of COM-FSM Classroom Utilization (2004 -2008)**



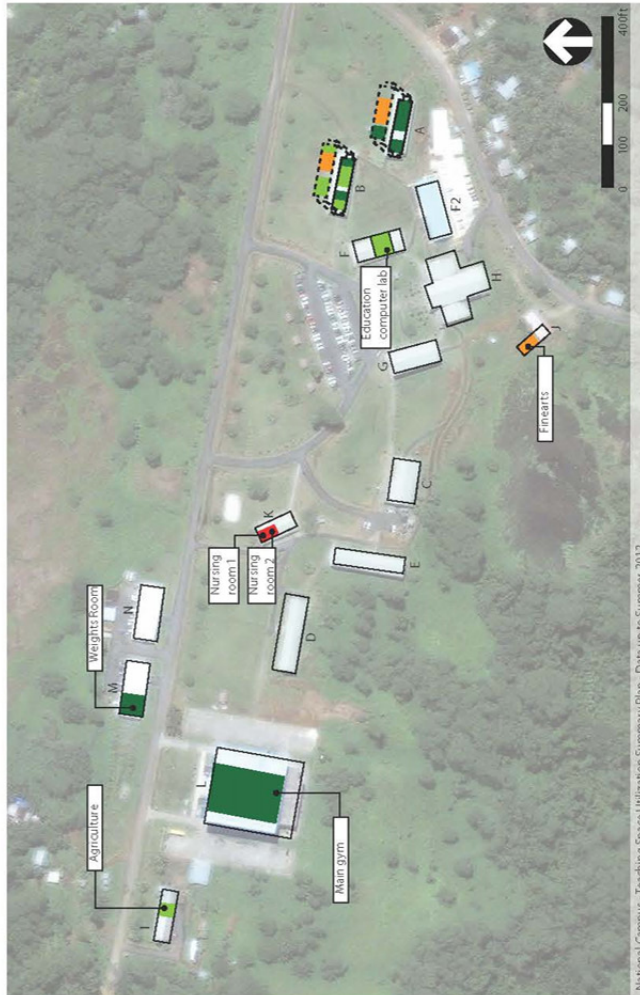
## 6.3 Classroom Utilization Plans

### National Campus



#### NOTE

This plan shows the Sandy Pond utilization assessment in Summer 2012. Nursing teaching spaces have been moved into building J for the start of Fall Semester 2013.

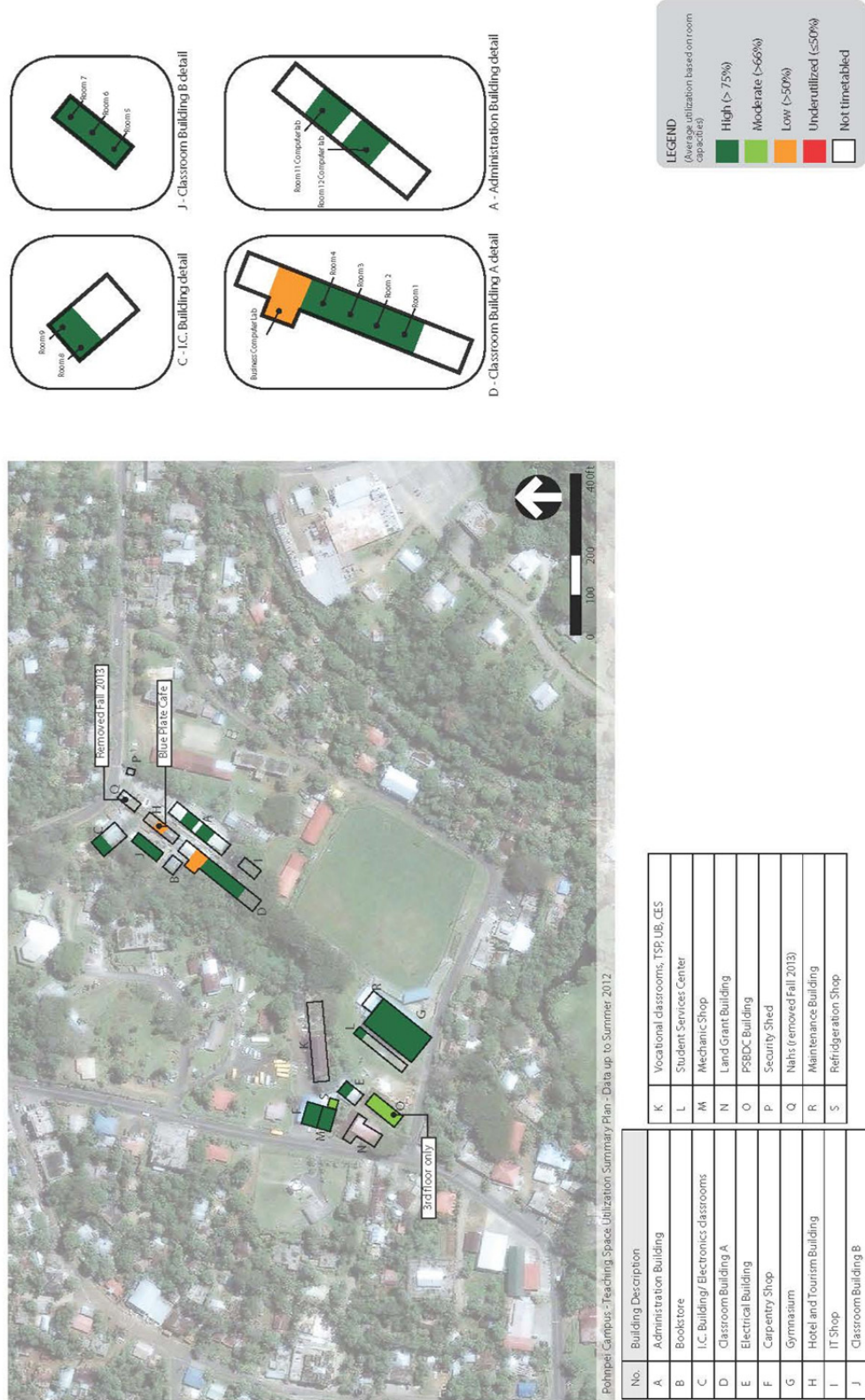


National Campus - Teaching Space Utilization Summary Plan- Data up to Summer 2012

No.	Building Description	Utilization
A	Specialized classrooms (Building A)	High (> 75%)
B	Standard classrooms (Building B)	High (> 75%)
C	Dining Hall	High (> 75%)
D	Men's Residence Hall	High (> 75%)
E	Women's Residence Hall	High (> 75%)
F	Faculty Offices (old)	High (> 75%)
F2	Faculty Offices (new)	High (> 75%)
G	Administration	High (> 75%)
H	Learning Resources Center and MTC	High (> 75%)
I	Agriculture	High (> 75%)
J	A + Center and Art Classroom	High (> 75%)
K	Book store, Dispensary, Student Services	High (> 75%)
L	FSM - China Friendship Sports Center	High (> 75%)
M	Security, Weights Room, IT Shop	High (> 75%)
N	Maintenance, CSE, Music Classroom	High (> 75%)



Pohnpei Campus





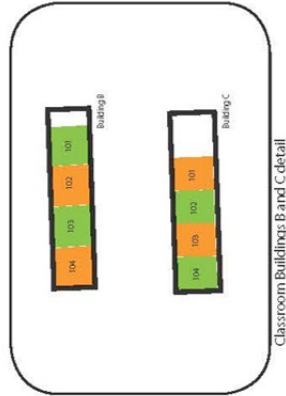
## Chuuk Campus



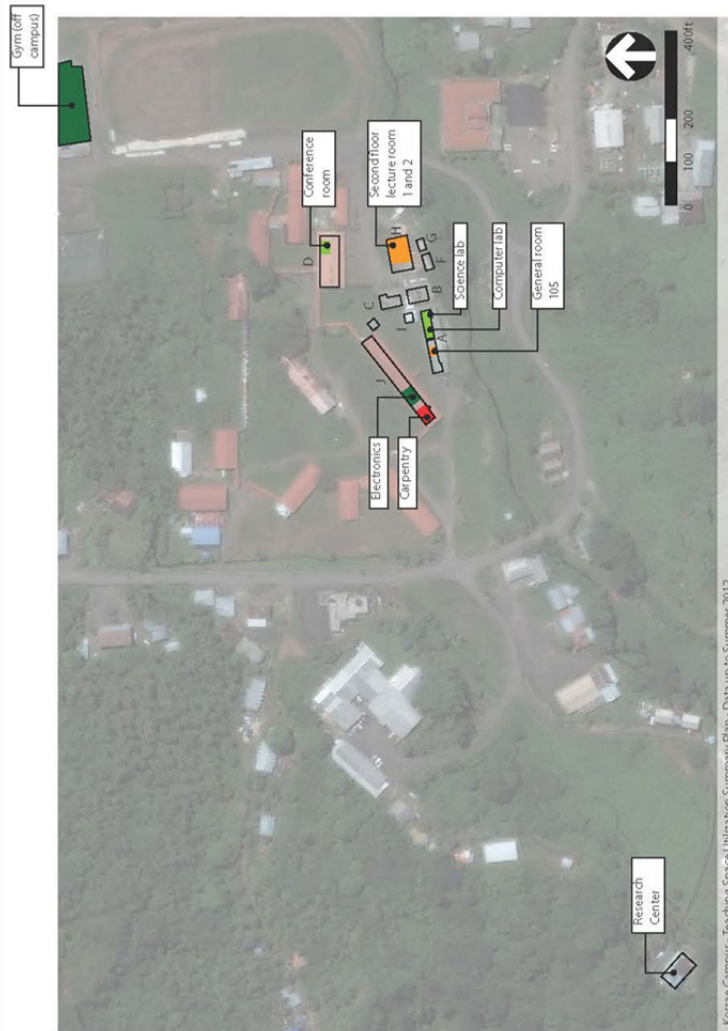
No.	Building Description
A	Administration / Faculty Office
B	Classroom Building B
C	Classroom Building C
D	Campus Dean's Office
E	Restrooms
F	CPE Building
G	Generator House
H	Student Services Building
I	Computer Lab
J	Student Center
K	Learning Resources Center

Off Campus

- Building D, Vocational Room 1
- Middtown - CMT Room 101



Kosrae Campus



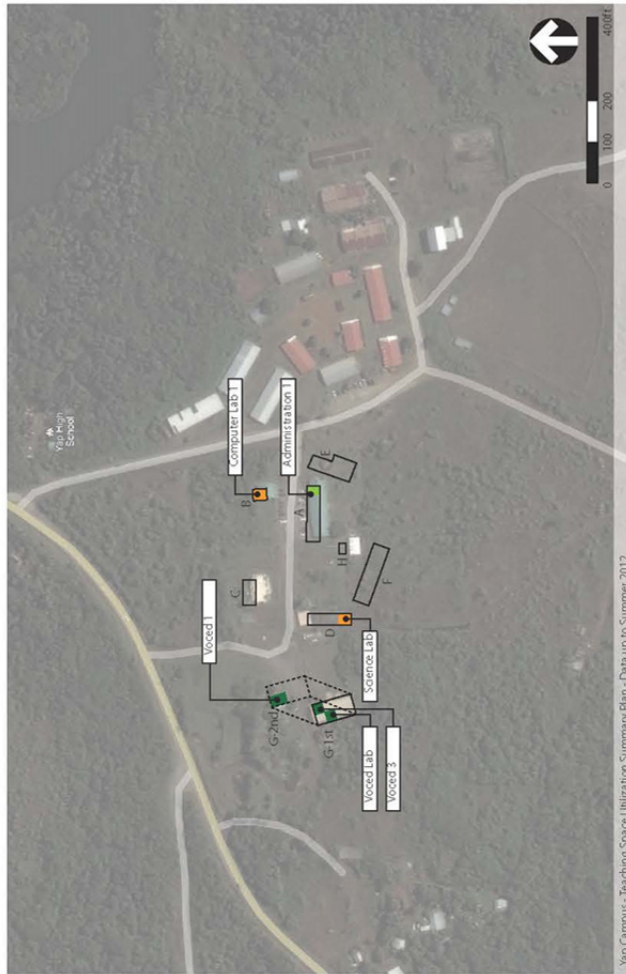
NOTE:  
Carpentry shop and electronic classroom in block J from summer 2013 semester.



No.	Building Description
A	Administration Building/ Classrooms
B	Land Grant Building
C	Faculty Building
D	Rose Macdowelung Library
F	Maintenance Shop
G	Maintenance Office
H	KSBDC Building
I	Bookstore
J	Learning Resources and Career Development

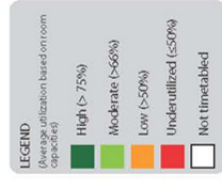
Kosrae Campus- Teaching Space Utilization Summary Plan- Data up to Summer 2012

Yap Campus

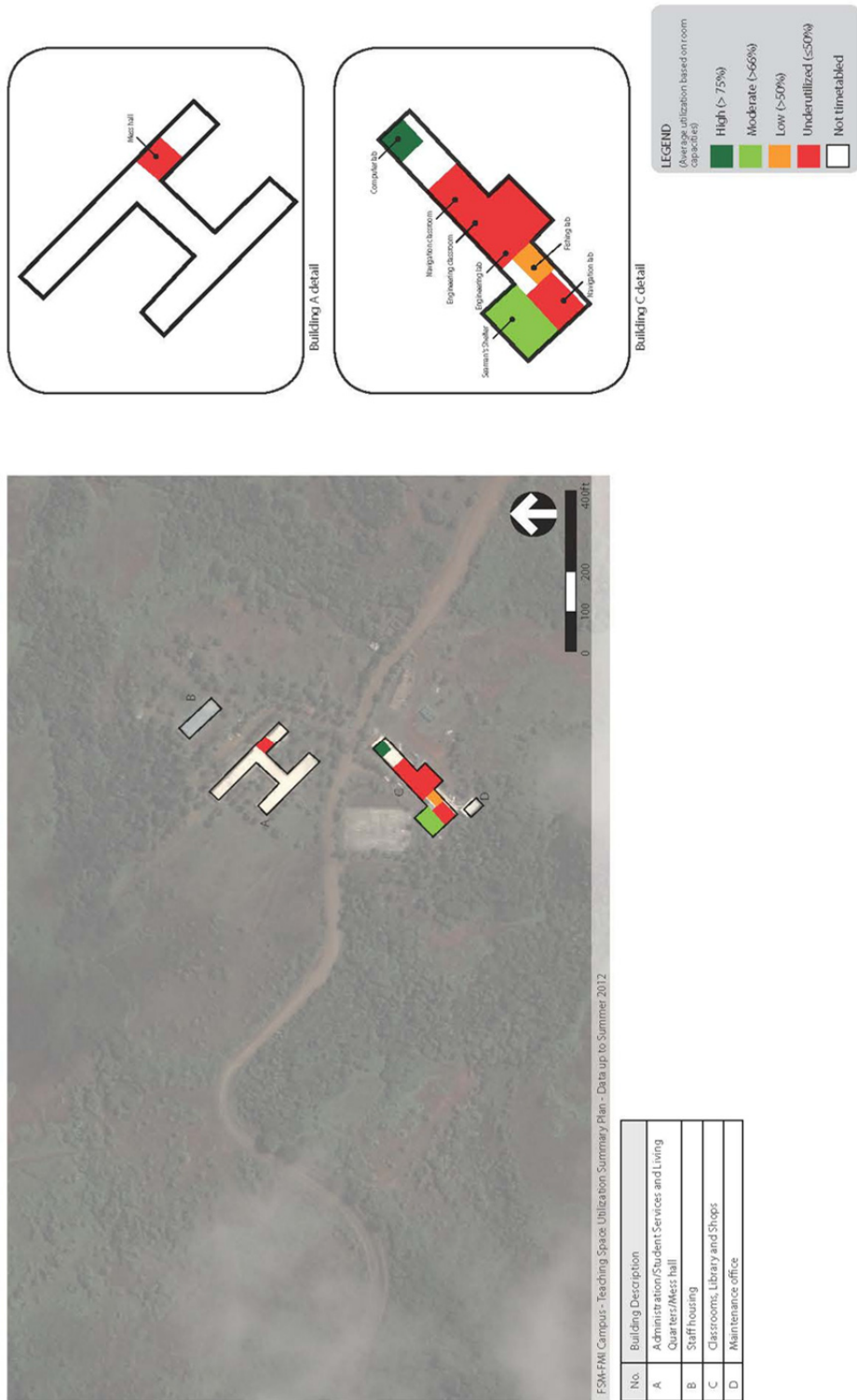


Yap Campus-Teaching Space Utilization Summary Plan - Data up to Summer 2012

No.	Building Description
A	Administration Building
B	Computer Lab
C	CBE Building
D	Science Laboratory
E	Student Center Building
F	Classroom Building
G	Vocational Building
H	Student Open Lounge



FSM - FMI



6

Beca

Facilities Masterplan Summary - Space Utilization Diagrams Part 1

College of Micronesia - FSM July 2013 rev A 6500242

## 7 Common Campus Design Principles

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### 7.1 Introduction

Design principles are a way of describing the “must have” qualities that a building or campus should have prior to the development of a design brief and accommodation schedule. These are informed from best practice as well as discussions with the client, operators and users. While there will be a range of architectural concept design options that may be developed using these design principles as a framework for design it is anticipated that any option developed could satisfy the high level objectives that are at the core of the design principles.

The following design principles have been generated through observations during site visits to each campus, discussions on site and input from the Project Control Group.

These principles outline the desired future character of the College and their development was also informed by the strategic outcomes and objectives outlined in The College of Micronesia – FSM Strategic Plan 2013-2017 draft. (2013, April).

Refer to the [http://wiki.comfsm.fm/@api/deki/files/2286/=Strategic-Plan-Draft\\_6APR13.pdf](http://wiki.comfsm.fm/@api/deki/files/2286/=Strategic-Plan-Draft_6APR13.pdf)

The design principles are divided into “common” design principles across all campuses and “specific” design principles providing further guidance for each campus. The specific design principles are included within each campus detailed report - Part 3.

### 7.2 College of Micronesia Vision and Mission

The Integrated Educational Masterplan (IEMP) 2013 provides a framework by which the College of Micronesia – FSM can attain its vision to:

*The College of Micronesia-FSM will assist the citizens of the Federated States of Micronesia to be well-educated, prosperous, globally-connected, accountable, healthy and able to live in harmony with the environment and the world community.*

and fulfill the mission of being:

*Historically diverse, uniquely Micronesian and globally connected, the College of Micronesia-FSM is a continuously improving and student centered institute of higher education. The college is committed to assisting in the development of the Federated States of Micronesia by providing academic, career and technical educational opportunities for student learning.*



This vision and mission reflect the identified values

#### VALUES



Extract from the COM-FSM. (2013, April). The College of Micronesia – FSM Strategic Plan 2013-2017 draft. Retrieved from [http://wiki.comfsm.fm/@api/deki/files/2286/=Strategic-Plan-Draft\\_6APR13.pdf](http://wiki.comfsm.fm/@api/deki/files/2286/=Strategic-Plan-Draft_6APR13.pdf)

In the IEMP six strategic Institutional Outcomes have helped to inform the Vision for COM-FSM.

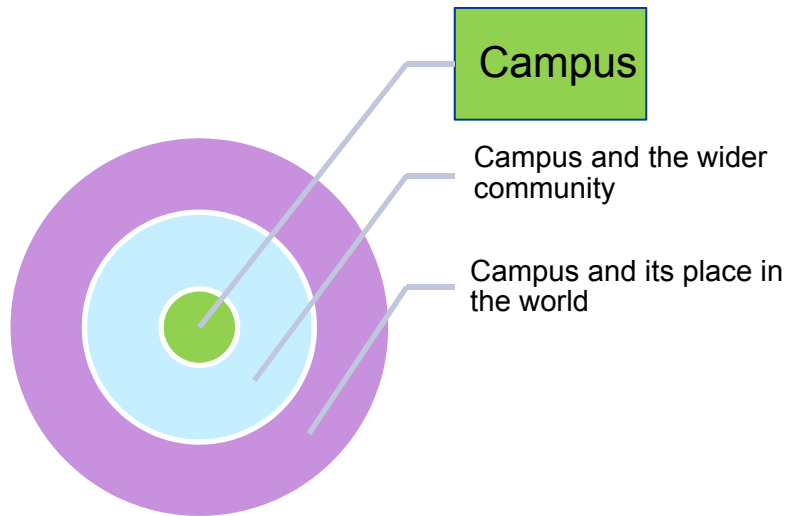
These strategic directions call for COM-FSM to do the following within the next 5 years:

1. Focus on Student Success
2. Emphasize Academic Offerings in Service to National Needs
3. Be financially Sound, Financially Responsible, and Build Resources in Anticipation of Future Needs
4. Invest in and Build a Strong Capacity in Human Capital
5. Be a Learning Organization through Development of a Learning Culture Guided by Learning Leaders
6. Evoke an image of Quality

Design principles are a description of the tangible ways in which the future form and character can be described. As they are overarching they sit under the Vision and above the five year strategic direction statements.

The principles are grouped in three parts: the campus itself, the campus and the surrounding area and finally the campus and the relationship with the world. This reflects being located in Micronesia yet also as outlined in the vision able *“to live in harmony with the environment and the world community”*

### 7.3 The Campus



### 7.4 Key Objectives

- Design buildings and the campus environment to be sustainable and to respond to the climate, topography and setting
- Design for buildings to accommodate change of use over time i.e. multipurpose spaces that can be adapted to suit future needs
- Create an adequate, healthy and functional learning and working environment considering the function and form of buildings, open space, character and circulation
- Consider efficiency in design and selection of materials to minimise the Total Operational Cost

#### 7.4.1 Site Design

The campus should be designed around:

- Identifying functions that are compatible with each other and group them into types of activity zones.
- The efficient use of infrastructure
- Consider safety and the importance of people on a campus by prioritising pedestrian movement over vehicular movement
- Identifying a variety of spaces for different uses – active/ social zones and quiet zones

#### 7.4.2 The Learning Environment

The zones on campus



- Provide distinctive academic and residential zones to provide separation for students who live on campus
- Provide for a student centred zone where student services, peer counselling and unstructured study can take place
- Provide for quiet study and interactive collaborative study area zones with acoustic separation between both
- Provide a defined zone for traffic circulation and parking on the perimeter of the site enabling the campus to be primarily for pedestrians
- The technology on campus
- Provide opportunities to maximise the use of wi-fi outside of buildings with the provision of seating areas, covered study spaces and including the addition of electronic charging stations
- Locate student areas within coverage of wi-fi zones
- Consider localising cooling to computer areas rather than overall room cooling



## 7.5 The Character and Feel of the Campus Environment

### 7.5.1 A campus that reflects its location in Micronesia

- Consider designing buildings that reflect the local vernacular building style acknowledging this can be accomplished using modern building materials.
- Arrange the campus buildings and layout to reflect Micronesian culture including consideration of the central building being the most important function and being taller as well as considering the arrival process onto the campus



### 7.5.2 A campus that embraces all, accessible to all

- Consider gender equity and cultural background in the design.
  - Provide places for small groups to meet and consider minimising sitting spaces where people have to walk between two groups sitting either side of a walkway.
  - Provide neutral spaces at the edges of main spaces to foster gradual integration of minority groups
- Enable the campus to be used by everybody without restriction due to a disability



### 7.5.3 A hub for students

- Provide for a student centred activity zone where student services, peer counselling and unstructured study can take place

## 7.6 The Built Environment

### The buildings – both the building forms and the relationship of the building forms to the environment

- Reference vernacular architecture either in building forms or materials but careful that their use does not unreasonably impact on the cost of ownership
- Create positive (not 'leftover') spaces by modifying existing buildings where possible to address / overlook spaces; and by inserting new buildings to help contain spaces that 'bleed' because they are too large or undefined to be appealing
- Where possible relocate building entries to line up with desire lines and main pedestrian axes
- Consider whether the building hierarchy is reflected in the difference in building scale, with most important buildings taking precedence along main axes.
- Use structuring elements such as symmetry and axes to order the building blocks.
- Locate new buildings to reinforce and activate open spaces and circulation routes – enable buildings to be aligned with and overlook pathways
- Locate and design new buildings to edge open spaces within the site, to help make spaces feel like 'places' rather than empty left over zones.

## 7.7 The Quality of the Interior Environment

### Spatial and facility ratios

As a basis for determining the spatial and facility ratios the following appendix was extracted from the Assessment of COM-FSM's 2006-2011 Strategic Plan by Sandy Pond Associates, May13 2012. The table in the appendix formed the basis of discussion during the site visits and any alterations to the table are noted in the comments column.

### Appendix B: Enrollment Management - Campus Standards Key Indicators

To ensure equity and quality of services across the six campuses of the college, the following broad guidelines will be used to determine how many students a campus may enrol. Wherever possible, the indicators have been expressed as per student ratios. In order to maintain consistent standards across the college, each campus will be expected to meet these criteria as soon as possible. All enrolment changes require the approval of the President.

The following spreadsheets provide the actual status of each campus and the various indicators and enrolment projections for each campus. The indicator data and projections are to be updated each fall and spring semester.

Indicator	Target ratio per student ratio	Comments
Student/Faculty ratio	1 faculty member for each 17-22 students	This range allows for unexpected vacancies # of full time faculty + part time (credits/12)
Learning resources staff ratio	1 LRC staff member for each 150 students	



LRC volumes capacity	30 volumes per student	Advised this has increased to 40 volumes per student during the development of the Facilities Study
Learning Resources seating capacity	1 seat in the LRC for every 10 students	Advised that goal is 1 seat for every 5 students during the during the development of the Facilities Study. This is unlikely to be able to be met in a dedicated facility so a ratio of 1:10 will be used for planning purposes
Counselors (FAO, OAR & Counseling)	1 counselor of each type for every 250 students	
Student Life Specialists (excluding dorm staff)	1 student life staff member for each 200 students	
Nurse/Health	1 nurse for every 1,400 students	
Administrative staff	1 administrative staff for each 190 students	Depending on the size of the campus
Overall Environment – Power & email access; toilet facilities, ratio of drinking water & building, availability of textbooks and refreshments	Percentage of time electrical power and email access available during all school hours; 1 female toilet for every 30 students & 1 male toilet facility for every 40 students; per cent of buildings with accessible drinking water; a bookstore and campus store or available food source	
Daytime security	1 security guard for every 300 students	This varies by the size and location of the campus and therefore must have some case by case considerations
Classroom capacity	1 classroom per 60 students	Individual class enrollment must not exceed recommended course enrollment guidelines
Maintenance	1 maintenance staff member for each 68 students	Ratio exclude janitorial and ground maintenance
Janitors	1 janitor per 140 students	Not including dorm janitors
IT Technician	1 technician per 300 students with at least 1 IT technician per campus	This currently represents a target for all campuses
Student computers	1 computer available for every 10 students	Includes computer labs, LRC and others

Faculty computers	1 computer for each full time faculty and 1 computer for each part time FTE	Assume dedicated computer and desk
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During the site visits to all campuses it was noted that there are a range of spaces for similar functions and campus size. This can be attributed to using the space that is currently available. Looking to the future development the following spatial target for various functions should be used as a guide.

Function	Spatial target	Comments
Information Technology	Office, workstation to repair computers, storage of computers, secure server room	Chuuk campus has a good server room and office configuration
Dean's office	Desk plus seating area for 2 visitors	Adjacent to conference room
Administration	Counter, workstation area, waiting area, printer area and file storage	
Bookstore	Fiscal offices included or adjacent, bookstore shelving, 2 desks (for state campuses), counter area for students	Chuuk campus has a good bookstore / fiscal office configuration
Faculty offices	Room for 4-5 desks, connection to a small meeting room for one to one discussions, access to storage	National and Chuuk campus are a good example of faculty office layout and size
Learning Resource Center	Walk through the computer lab lobby to access the library area. Couches, tables and study carrels	Kosrae has a good computer lab/ library configuration

#### 7.7.1 Air

- Provide air, which is as fresh and clean as possible to each classroom and workspace by:
- Specifying building and furniture, materials/products with the least possible contaminants emission (e.g. formaldehyde, lead releasing products etc to be avoided).
- Providing ventilation with air change rates which are higher than the minimum rates required by utilized design codes. Where practical preference will be given to natural ventilation solutions. Control of ventilation should be available to the individual users of each space.

### **7.7.2 Light (health and safety)**

- Provide full-spectrum light to each space which is suitable for all users and activities both day and night by:
- Providing natural light to all workspaces with fixed or adjustable glare control devices. Provide glazing to allow full-spectrum natural light to penetrate all classrooms and workspaces, where appropriate.
- Providing glare free artificial lighting, using full-spectrum fluorescent or LED lamps with a constant lighting level between 350-450 lux.

### **7.7.3 Temperature**

- Provide a comfortable temperature to all occupied areas by:
- Using building materials and design solutions which prevent the sun from overheating the classrooms and workspaces.
- Providing supplementary cooling systems in those areas where a constant cool temperature is required for equipment or to suit the function of the room – set point at 25 degrees Celsius.
- Optimising the use of natural ventilation to provide comfort conditions, e.g. breezeways.

### **7.7.4 Sound**

- Provide spaces which are acoustically optimum for their function and which minimise sound interference and noise pollution from within the complex by:
- Specifying surface finishes which produce appropriate levels of reverberation for each function within the complex (no echoes).
- Isolating noisy equipment from teaching and workspaces and control noise at source.
- Providing a series of 'quiet' rooms and areas for focussed study within the campus

## **7.8 The Landscape Environment**

### **7.8.1 Variety of spaces offering different activity use – active, social and quiet zones**

- Design a logical hierarchy of open spaces that clearly supports visitor orientation within the campus as well as staff and students
- Design a range of spaces of different sizes and character, to provide choice and interest. Relate open spaces to view shafts and key points of interest within the campus
- Spaces and their connecting routes should be fully accessible and with high amenity, including shelter where there is high rainfall, seating areas, landscaping and signage, and a consistent palette of furniture and lighting.
- Partially cover / enclose spaces / pedestrian paths that are exposed to weather and wind, for pedestrian amenity
- Pathways to be wide enough for 3 people to walk alongside each other

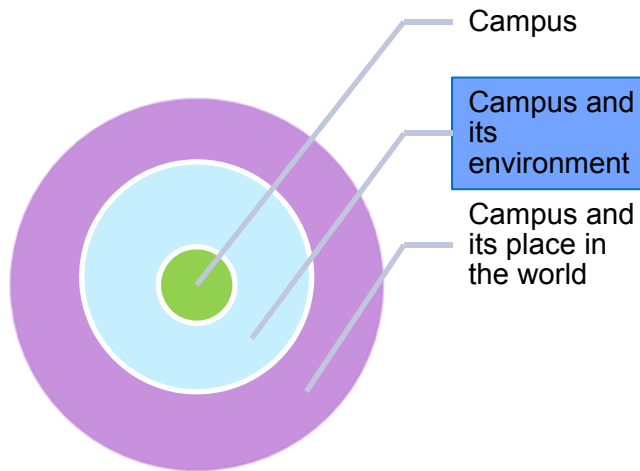


### 7.8.2 The role of trees and landscaping on campus

- Take opportunities to feature local plants i.e. consider using flowering shrubs to add colour and variety, medicinal plants, culturally important or fruiting trees. A campus specific landscape palette has been developed for the Yap Campus (Refer to Part 3 Report) – this template could be used for other campuses and modified to suit the species within each state.
- Use shade trees to create communal outdoor meeting places in open spaces
- Deeper rooting trees to be selected for campus areas with resistance to high winds as these are planted outside of the underground services zones



## 7.9 The Campus and its Relationship to the Surrounding Area



## 7.10 Key Objectives

To be a Community College within each State providing for the needs of the wider community and a place of ongoing educational opportunities

## 7.11 The Physical Relationship Between the Campus and the Wider Community

### 7.11.1 Interface with the community

- Provide amenities that can be used and accessed by the wider community - potential for night classes, dispensary, learning resource center access and locate these on the edge of the campus

### 7.11.2 Capturing views

- Look at opening up views from the campus as well as framing interesting sites. The campus could borrow from the outside landscape through the opening up of these views to create a more interesting space that emphasises these views
- Protect and enhance important view shafts and panoramic views to the ocean and other significant surrounding landscape features.

### 7.11.3 Safety

- Separate pedestrian areas and vehicular areas (as much as reasonably practicable) to create defined pedestrian routes and promote safety on the campus.
- Provide access for fire truck and emergency vehicle access through to key points within the site

#### 7.11.4 Security

- Consider how the campus can be reduced into defined secure areas as move from day to nighttime

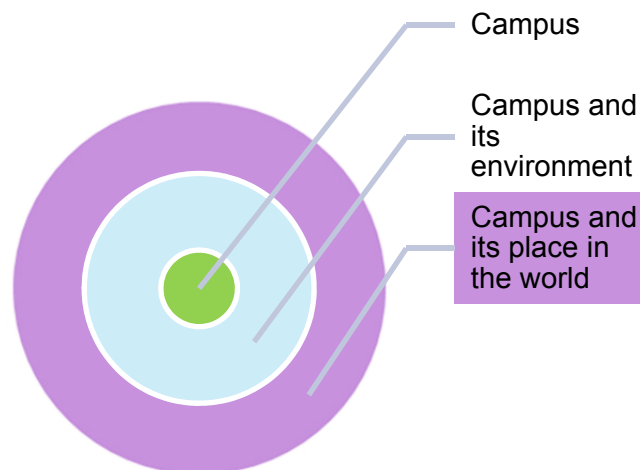
#### 7.11.5 Campus edges

- Mark the campus by a well defined edge that also allows visual interaction between the campus and the surrounding community
- Use signage to reinforce the campus edges and assist way finding

#### 7.11.6 Campus entry points

- Consider how the entry reflects the campus. A friendly, well maintained and welcoming entry conveys openness and can encourage visitors and interaction
- Consider areas where public are encouraged to come onto site i.e. recreation areas, vocational education, learning resource areas and provision of parking spaces

### 7.12 Campus Relationship to World Issues



### 7.13 Key Objectives

- Align with the goal of the 2010 FSM Energy Policy that states “By 2020 the share of renewable energy sources will be at least 30% of total energy production, while electricity efficiency will increase by 50%. Energy efficiency referred here would also mean reduction of energy loss.”
- COM-FSM actions will align with the Energy Policy action points outlined in the 2010 FSM Energy Policy

## 7.14 The Energy Efficient and Sustainable Campus

High level principles are to:

- Conserve resources and save energy
- Protect natural areas
- Reduce carbon footprint through considered energy use
- Incorporate LEED (Leadership in Energy and Environmental Design) construction principles
- Minimize building footprint
- Design flexible (long life, loose fit) buildings whose uses can change over time.

### 7.14.1 Energy

Optimise building location and design in order to minimise the use of energy without reducing comfort and efficiency. The guidelines to achieve this are:

- Provide low wattage energy efficient lights.
- Provide individual controls to light sources. (Switching and/or dimming)
- Investigate efficiencies that can be gained from the use of power conditioners especially the effect consistent power quality can have on the life of sensitive equipment and fixtures e.g. compact bulbs
- Use of time and/or movement activated switches in selected spaces to avoid lights being left on unnecessarily.
- Optimise use of natural climate control to limit electricity use for ventilation and cooling.
- Specify energy efficient cooling equipment.
- Provide optimum levels of insulation in floors, walls and roof space
- Provide pressure sensitive taps and showers which automatically turn off after a few minutes to minimise water waste.
- Specify low flow taps and fittings
- Consider water harvesting opportunities
- Installation of photovoltaics (solar panels) on the roof where appropriate.
- Specify energy efficient and water use appliances
- Use solar hot water heating where appropriate
- Review alternative energy options e.g. wind power

### 7.14.2 Non renewable natural resources

The goal is to minimise the use of non-renewable natural resource. The guidelines to achieve this are:

- Identify and specify materials with a lifecycle of 50 years or more.
- Identify and specify materials which have minimum effect on the environment and which are renewable.
- Identify and specify materials which minimise the use of energy and other resources during production, fabrication and transportation.
- Re-use existing buildings where possible instead of demolishing (factoring in the serviceable life)

- Consider how and where demolition and waste construction materials are disposed of on the island.

#### **7.14.3 Maintenance versus replacement of buildings**

- Consider maintenance versus replacement costs in the design of all new buildings
- Optimise maintenance regimes to extend the life of existing campus buildings
- Specify materials that minimise maintenance costs and enable simple maintenance regimes that extend the serviceable life
- Specify materials that consider the harsh environmental conditions
- Form a strategy for replacing buildings beyond a serviceable cost limit (above and beyond an agreed replacement value)

**NOTE:** There are no hard and fast rules and each design decision must be based on investigation of the information available at the time.

### **7.15 The Climate Responsive Campus**

Climate responsive design recognises that climate affects both the thermal performance of buildings and human comfort levels, and combines the study of climate, biology and building design to enhance living conditions and reduce energy consumption.

This practice can be defined as “the use of design principles and strategies which help reduce the ecological impact of buildings e.g. by reducing the consumption of energy and resources, or by minimising disturbances to existing vegetation” (Fawcett et al 2006)<sup>10</sup>.

Due to the tropical climatic conditions experienced in the Federated States of Micronesia, climate sensitive design is fundamental to achieving quality built form and comfortable spaces. The following details how design can be used to create solutions that respond to the local climate.

#### **7.15.1 Campus layout**

Ventilation is essential for a hot humid climate, and existing air movements should be utilized and enhanced as much as possible to provide evaporative cooling, reduce temperatures and to avoid mould growth.

Spaces that are cool, shady and capture gentle cooling breezes will always attract greater concentrations of people. Places that are especially climatically pleasant will attract groups of people who meet to chat, study or simply sit.

At the COM-FSM campuses, the places where people congregate due to pleasant climatic conditions are:

1. National campus - under the narra trees
2. Pohnpei campus - under the avenue of mahogany trees

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<sup>10</sup> (Fawcett, A., Palich, N., Nervegna, L. 2006, 'Ecologically Sustainable Development – Glossary of Terms', BDP Environment Design Guide, NOT 11, May)

### 3. Kosrae and Yap campus - The gap in the Administration Block verandah

Principles for campus design that creates a pleasant microclimate:

- An open built form pattern will enhance air flow. Buildings should be separated, with few structures between them so as to improve air flow
- Any footpaths between buildings should be shaded, and air should not be allowed to pass over such hot surfaces before reaching buildings
- Buildings in rows should be staggered to avoid downwind airflow shadows, and long facades should introduce devices (such as wing walls) to direct airflow into buildings
- Walkways should be covered, but cross-ventilation should not be impeded.
- Generous and well distributed areas of vegetation help to improve the microclimate
- Provide a vegetated screen as a barrier to direct sun heating up the building facade

#### 7.15.2 Landscaping

Vegetation provides an excellent means of improving the climatic conditions. Its surface does not heat up nor reflect heat to adjacent spaces and it provides efficient shading at low cost. However, it has to be arranged in a way that does not impede air circulation. Good selection and grouping of vegetation can concentrate and direct breezes and wind to improve the cooling effect where desired. Vegetation also absorbs dust and pollution, and the type of vegetation may also influence wind velocity. The ideal tree for a hot, humid climate has a free, high trunk and high canopy providing shade.

Principles:

- A vegetated cover of the ground keeps it comparatively cool and contributes much to a cooler outdoor microclimate. Ground areas should be vegetated rather than paved wherever possible, with care taken to not impede air flow into buildings
- Asphalt increases radiation, and stone paving or cement increases it to a lesser extent. The use of asphalt should be discouraged
- High trees with wide, shading crowns provide significant protection from solar radiation and should be incorporated as much as possible into any landscape planting

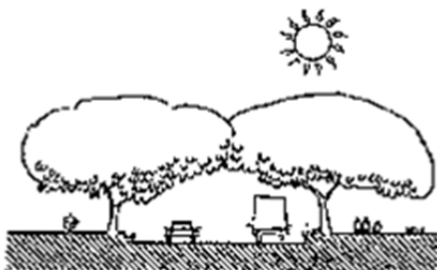


Figure 1: Climate Responsive Building - Appropriate Building Construction in Tropical and Subtropical Regions (SKAT; 1993; 324 pages)

- Dense or tall bushes should not be planted near buildings. The space between the ground vegetation and the high crowns of the trees should remain open, providing free access for the wind at the level of the living spaces



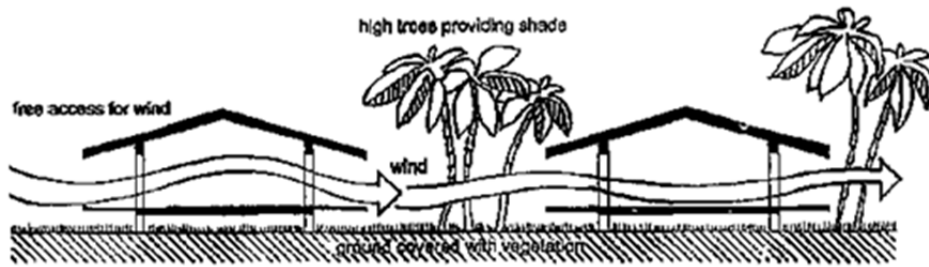


Figure 2: Climate Responsive Building - Appropriate Building Construction in Tropical and Subtropical Regions (SKAT; 1993; 324 pages)

In the COM-FSM campuses, suitable species for landscaping gathering spaces that provide shade and protection have already been used in specific areas.



Figure 3: Groups of students sitting under the narra tree



Figure 4: Canopies providing a shaded and cool area for pedestrians along the walkway to Classroom Building B at the National Campus



Figure 5: Stone slab seating at the entrance to the Learning Resource Center at the National campus



Figure 6: Seating areas along the Pohnpei campus boundary under the line of the mahogany trees

### 7.15.3 Building design

The design of buildings has a significant impact on the personal comfort of occupants or users. Well-designed buildings are dry, well-ventilated, comfortable and neither too hot nor too cool.



There are a number of factors that influence the successful design of a building. The placement of a building on a site, the basic arrangement of form and the basic internal layout are the most critical determinants of a building's comfort and should be addressed first. Following on from that, matters such as materials and efficiency can be considered.

The main goal is the reduction of (i) direct heat gain by radiation through openings and (ii) the internal surface temperature. The building should therefore be designed not only with protected openings, but also with protected walls. This task will be much easier if the building is kept low. In addition, the roof should extend far beyond the line of walls, with broad overhanging eaves and other means of shading. Intense diffuse solar radiation calls for buildings that have large overhanging roofs and wide shaded verandahs.

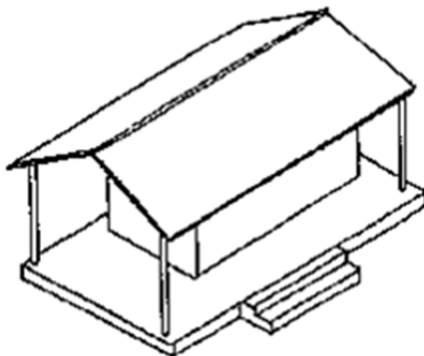


Figure 7: Low building with wide overhanging roof [Climate Responsive Building - Appropriate Building Construction in Tropical and Subtropical Regions](#) (SKAT; 1993; 324 pages)

The height of the buildings should, in general, not exceed 3 storeys. Higher buildings receive too much radiant heat and give wind obstruction to neighbouring buildings.

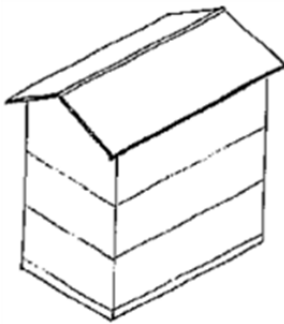


Figure 8: Building height not exceeding 3 storeys [Climate Responsive Building - Appropriate Building Construction in Tropical and Subtropical Regions](#) (SKAT; 1993; 324 pages)

The design of buildings for hot humid climates such as those in Micronesia should encompass the following basic principles:

- Buildings should respond to the climate, topography and setting as well as being able to stand up to extreme weather conditions
- The long sides of a building should be oriented to the north and south, where possible, and should be protected by an overhanging roof or eaves to reduce solar gain. Where a predominant wind direction can clearly be identified, long-shaped buildings should be arranged at 30 and 60 degrees across this direction. It is better to break up the length of long buildings with breezeways to allow air flow through
- The width of the building should be determined by ease and effectiveness of natural ventilation and light

- Use verandahs or large roof overhangs to:
  - enable windows to remain open during rainy periods.
  - provide shaded and dry access around the building for occupants and the public.
  - keep the building cooler by shading the external building fabric especially windows.
- Insulate roofs and verandah overhangs to reduce heat gain and rain noise.
- Select lighter colour roofing material to reflect radiant heat
- Consider the maximum shipping length of roof sheets as a factor in determining the optimal building width.
- The high humidity and warm temperatures require maximum ventilation. This is valid not only for the design of the elevations, but also for the floor plan.
- Free passage of air for cross-ventilation can be achieved by having large openings, not only in the outer walls but also in the internal partitions. An even more efficient solution is that of single-banked rooms with access from open verandahs or galleries.

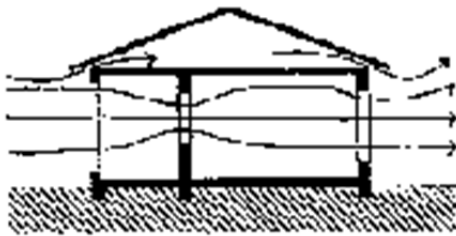


Figure 9: Large openings and screened in porches. [Climate Responsive Building - Appropriate Building Construction in Tropical and Subtropical Regions](#) (SKAT; 1993; 324 pages)

To achieve this:

- orientate buildings at an angle to the prevailing wind – preferably building faces at 30 & 60 degrees to wind not square on.
- have frequent breaks in long facades to keep breeze flowing through even when buildings are less occupied and operable windows are closed.
- locate intake ventilation openings at low level wherever possible to pass across occupants' bodies rather than over their heads.
- locate exhaust ventilation at high level to optimise thermal stack effect and remove hot air pockets at ceiling level.
- place offices or other partitioning that slows or disturbs airflow downstream of open plan spaces.
- position or protect at least some ventilation openings so they can operate continuously day and night even when spaces are unoccupied.
- design an elongated floor plan with minimum internal partitions (preferably open plan spaces) to create an easy passage for cross ventilation.
- high ceilings will help enable heat to ventilate out via roof joints (or chimneys).
- Look at possibilities for diverting the wind direction by means of vegetation and structural arrangements

Conceptual building design is a process that weighs a range of design drivers and decisions. Not all of these basic principles will be employed in every case and a detailed analysis of the specific situation should be part of the process of each design development.

Input for this section has been sourced from Climate Responsive Building - Appropriate Building Construction in Tropical and Subtropical Regions (SKAT; 1993; 324 pages), <http://collections.infocollections.org/ukedu/en/d/Jsk02ce/5.2.html>



## 8 Asset Condition Assessment

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### 8.1 Introduction

An Asset Condition Assessment of the existing buildings and site infrastructure located at the Yap, FSM-FMI, Chuuk, National, Pohnpei and Kosrae campuses was carried out in June 2013..

The purpose of this Asset Condition Assessment Report is to record the existing condition of the COM-FSM assets (buildings and site infrastructure) so that:

1. The indicative cost of operating the COM-FSM assets through a 10, 20 and 30 year life cycle is identified and,
2. Decisions to either renew/upgrade or to demolish/replace the existing assets can be made.

This Asset Condition Assessment Report gives each asset an indicative condition grade, identifies the asset replacement cost, and the cost of operating (renewing and maintaining) them to provide a base reference for campus Facilities Planning decisions. It should be noted that the costs presented assume that the existing assets will be renewed, refurbished and maintained (with the exception of some buildings which are demolished). Any buildings which are replaced by the current campus Facilities Planning process (and subsequent changes in annual operating costs) are not included in this Asset Condition Assessment Report

The findings of this section are based on the on-site Condition Assessment conducted by Beca in June 2013. It should be noted that a visual assessment only has been carried out and that no in-depth investigations (e.g. no detailed structural or seismic strength investigations) have been undertaken.

### 8.2 Scope of Condition Assessment and Key Outputs

The scope of the Condition Assessment covers 68 No. existing buildings (excluding minor support structures and buildings) and site infrastructure located within the five COM-FSM campuses. The site area of the Yap, FSM-FMI, Chuuk, National, Pohnpei and Kosrae campuses totals approximately 6,283,851 sqft (144 acres) with 285,138 sqft of buildings. The key tasks undertaken include:

- The five campuses were visited in June 2013 to photograph and record visual defects in the buildings and site infrastructure.
- Data gathering and making observations.
- Grading the condition of each building asset (against a pre-determined set of criteria) and collating this to establish an overall condition grade for each asset.
- Assess the physical condition of the built assets (i.e. buildings and site infrastructure). Establish baseline condition to enable Life Cycle cost analysis.

The key outputs include:

- A general overview of the current condition of the assets.
- A condition appraisal of each building block by building element.
- Site observations and records of the existing site infrastructure
- Estimate of the potential replacement cost of each asset.

- Estimate the Operational Cost (Asset Renewals plus maintenance) of the assets as they currently exist. NOTE: the Operational Cost contained in this Condition Assessment assumes that all current assets are retained and maintained. Alternative Operational Costs for the proposed campus Facilities Planning re-development are noted separately in this overall report

### 8.3 Definitions

The following terminology has been used in the Condition Assessment Report and is defined as follows:

Terminology Used	Definition
Annualised Cost	The operational cost (renewals plus maintenance) which is averaged across either a 10 or 30 year period
Assets	Buildings, facilities and site infrastructure which are owned by CoM-FSM. For the purposes of this report assets exclude buildings and land which are leased (from other parties).
Condition Grade	Assessment of current condition, the amount of deterioration and life remaining in the asset (or element) – refer to Beca Condition Grading System (table below)
Element (Building Element)	An individual part of an asset or building e.g. substructure, roof, floor finishes, mechanical services.
Maintain / maintenance	The regular / routine upkeep of the asset. This includes building washing, minor repairs and building services maintenance etc.
Operational Cost	The combined cost of renewal (of deteriorated elements) and maintenance of assets. The cost (and funding required) required for the upkeep of the assets and to extend their serviceable life.
Renew / Renewal	The periodic renewal (or refurbishment) of an individual element when it has reached the end of its economic life e.g. the renewal of a roof when it is corroded or the renewal of air conditioning units when they can no longer be maintained
Replace / Replacement	Where an entire asset has deteriorated to the point where it is deemed to be uneconomic to renew individual elements it is demolished and may (if required) be replaced with a new asset/facility
Run-down	The time period between when an asset is identified as needing to be demolished and replaced is defined as the 'run-down period'. Minimal maintenance, essentially to rectify any health and safety issues only, is carried out during this period (to reduce costs).

### 8.4 Methodology

The approach we have adopted for carrying out the Condition Assessment is based on the following principles:

- Inspect, photograph and assess all built assets on an elemental basis (e.g.. Building Structure, Internal Building Fit-Out, Building Services and Site Infrastructure, etc) to establish the baseline of physical condition for the facilities (Refer: Beca Condition Grading System - Table below)
- Identify immediate maintenance requirements (from the site inspection) that can help extend the serviceable life of built assets.
- Quantify and value building/site infrastructure elements to understand the full asset replacement cost.
- Develop a maintenance cost plan that addresses the upkeep of the facility. This identifies when elements of the assets are due for renewal and the budget required for this renewal.
- Forecast capital replacement cost cycles taking into consideration the baseline condition assessment.

- Calculate the Operational Cost requirements in terms of asset renewal and maintenance costs.

## 8.5 Information Collection

As part of this building condition assessment, Beca undertook various information collection and data gathering activities to gain an understanding of the existing buildings and site infrastructure on site. This included for gathering and reviewing existing building and maintenance records, taking photographic records of defects encountered, detailed annotation of the building condition (and other specific findings), reviewing comments from a facility questionnaire and liaising with the on-site property manager to address any specific issues or requirements.

## 8.6 Condition Grading System

The condition of the buildings and site infrastructure elements were recorded and graded on a scale of 1 to 5, the basis of which is as detailed below:

### Beca Condition Grading System

Condition Grade	Life Expiry (%)	Grade Definition
0	0%	Not present or not applicable
1	0% to 20%	The building/element is new and is functioning as required. Routine maintenance is required to extend serviceable life
2	20% to 40%	The building/element is functioning as required. Routine maintenance is required to extend serviceable life
3	40% to 60%	The building element is approaching the end of its serviceable life but is still functioning as required. Significant maintenance is required to extend serviceable life.
4	60% to 80%	The building element is showing signs of failure and deterioration. Extensive maintenance is required or the item should be considered for renewal or replacement
5	80% to 100%	The building element has failed and has deteriorated significantly beyond the point of repair or renewal. The item must be replaced

The Condition Grades are used to assess the point at which the asset undergoes renewal or replacement. The condition assessment, amount of remaining life in each element, the forecast capital replacement cost and operational costs are all considered when determining the point of renewal or replacement. This assists in supporting operational cost funding proposals.

For the CoM-FSM, we have assumed that a condition grade of 4 or 5 will generally trigger the requirement for renewal of building elements, or for the replacement of assets. It should be noted that in some cases the overall condition of a building may be grade 3, but because of structural failure of either the foundations or the building frame elements (which have a condition grade of 5) it is considered uneconomic to renew/maintain the building and demolition/replacement is recommended.

## 8.7 Building Elements Assessed

The building condition assessment consisted of an inspection of the building premises and above ground site infrastructure. This was carried out on a 'block-by-block' basis and covered both the interior and exterior of the buildings and site improvements. The information recorded from the



building condition assessment was used to provide real-time information on the current state of building assets which is critical for accurate capital replacement and maintenance expenditure planning.

The plans supplied by COM-FSM were used to calculate the general floor, wall and ceiling areas of each building and open space. The building elements that were assessed as part of the building condition assessment typically included the following:

Elements Assessed	Checks Made For
Structural Elements Generally	Evidence of spalling concrete, cracking, settlement, corrosion, poor workmanship, decay, insect attack (termites/borer), etc
Roof Finishes	Delaminating and flaking paint finishes, excessive mould, worn liquid applied finishes, etc
Roof Cladding	Corrosion, bowing and warping of cladding material, flashings around penetrations, water ingress, insufficient fixings, etc
Wall Structure/Cladding	Corrosion, bowing and warping of cladding material, flashings around penetrations, water ingress, insufficient fixings, etc
External Wall Finishes	Delaminating and flaking paint finishes, excessive mould, cracked and worn plaster finishes, water ingress, etc
External Doors	Rotting timber or corroding doors, door frames and hardware, Significant damage through vandalism or general wear and tear.
External Windows	Rotting timber frames, corrosion, inadequate flashing details, signs of water ingress, vandalism damage, wear and tear
Ceiling Finish	Warped ceiling tiles, water damage, worn or flaking paint finishes, excessive mould growth, etc
Ceiling Structure	Deflection or sagging in the ceiling line, etc
Internal Wall Finishes	Worn or flaking paint finishes, excessive mould growth, general wear and tear of finishes, vandalism, etc
Internal Partitions	Rot, general wear and tear, vandalism, penetrations, etc
Floor Finishes	General wear and tear, lifting or delaminating floor coverings, cracked or broken tiles, threshold strips, etc
Floor Structure	Rot, marks, leveling of floor, penetrations, water ingress, etc
Internal Doors	General wear and tear, vandalism, etc
Services Generally	General age and condition of the service installations (Note: Not a detailed audit)

Dashboards recording individual building condition grades and the top five elements requiring urgent maintenance, renewal or replacement are included in the appendices of the individual campus specific reports.

## 8.8 Forecast of Operational Costs

The forecast Operational Costs have been prepared as follows:

1. Develop the Maintenance Cost Plan. This is the cost of annual routine maintenance and includes building washing, painting, repairs and maintaining building services (mechanical, electrical fire etc.). This cost has been established by multiplying quantities (e.g. wall area)

by an appropriate \$/ft<sup>2</sup> rate for washing or painting. To this an allowance for general overheads (e.g. supervision, vehicle running expenses etc.) has been added.

2. Develop the cost of periodic element Renewals. From the condition grade assessment and amount of remaining life in the building element the date and cost of renewal is determined (e.g. a roof with 10 years life remaining has been budgeted for replacement in 2023). For the COM-FSM campuses the cost of renewals has been viewed over 10, 20 and 30 year periods.
3. The forecast Operational Cost is established by adding annual maintenance and periodic element renewal costs. This is annualised or averaged over a 30 year period (i.e. the total operational cost over 30 years divided by 30). It should be recognized that for cash-flow purposes actual operational costs will vary from year to year depending on the amount of actual renewals required in that specific year. Detailed monitoring and management of the operational cost cash flow on an annual basis will be required by COM-FSM.

## 8.9 Escalation

Escalation over a 30 year period of asset renewals and maintenance is a significant cost. Because of the significant impact of escalation two sets of cost, one which excludes escalation (i.e. present day 2013 costs) and the other which includes escalation have been presented at the main summary level. Escalation has been assumed to be 3.4% per annum for the next 30 years. This is based on an assessment of historical data provided by Mundi (refer web-site address below):

[http://www.indexmundi.com/federated\\_states\\_of\\_micronesia/#Economy](http://www.indexmundi.com/federated_states_of_micronesia/#Economy)

It is critical for long term funding purposes that the allowances for escalation are included in all budgets and funding applications.

## 8.10 Economic Modelling

All costs have been presented in 2013 dollar values and have been escalated over a 30 year period. No economic modelling to calculate the future cost of money, net present value or allowance for funding/intersect charges have been made. It is recommended that a detailed economic model of the operational cost of the CoM assets is carried out as this may influence the funding requirements.

## 8.11 Results/Findings

### 8.11.1 Condition Grade Assessment Results

The following is a summary of the condition grade of the assets across the six campuses.

Campus	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Yap	2	2	3	2	
FSM-FMI			1	5	
Chuuk			8	2	1
National			13	2	
Pohnpei			12	3	1
Kosrae			6	5	
<b>Total</b>	<b>2</b>	<b>2</b>	<b>43</b>	<b>19</b>	<b>2</b>

From our condition assessment we observe the following:

1. Buildings constructed from permanent low maintenance materials e.g. blockwork walls, aluminium windows etc. are generally in better condition and have a longer economic life span than steel or timber framed structures.
2. Most buildings have water tight issues with their roofs and many require re-roofing or roofing repairs. The ingress of water is causing additional deterioration to the buildings.
3. A large number of air conditioning units are due for renewal and this will be a significant cost.
4. Maintenance being carried out under the current Operational budget of \$150,000 per annum is insufficient. The periodic renewal of building element under the IF Maintenance Fund of \$350,000 per annum is also insufficient. There is a significant amount of deferred asset renewals and maintenance which is increasing the amount of deterioration in the assets.
  - a. Unless the current Operational budget is increased the condition of the assets will continue to deteriorate and the number of buildings requiring replacement (and consequently additional capital replacement funding) will increase.
  - b. A clear, well organised asset renewal and routine maintenance plan needs to be developed and this needs to be implemented. An indicative asset renewal and maintenance cost plan has been included in Appendix D of this report as an all campus summary and Appendix C of the specific Part 3 campus reports.
  - c. Regular monitoring and review of the asset renewal and routine maintenance plan needs to be carried out.

#### **8.11.2 Forecast Operational Costs Results**

Outlined below are forecast operational costs split into 10 year sections over a 30 year period. Note that costs including and excluding escalation are identified. Funding of the operational costs should be based on the costs that include escalation.

**Forecast Operational Costs – Excluding Escalation**

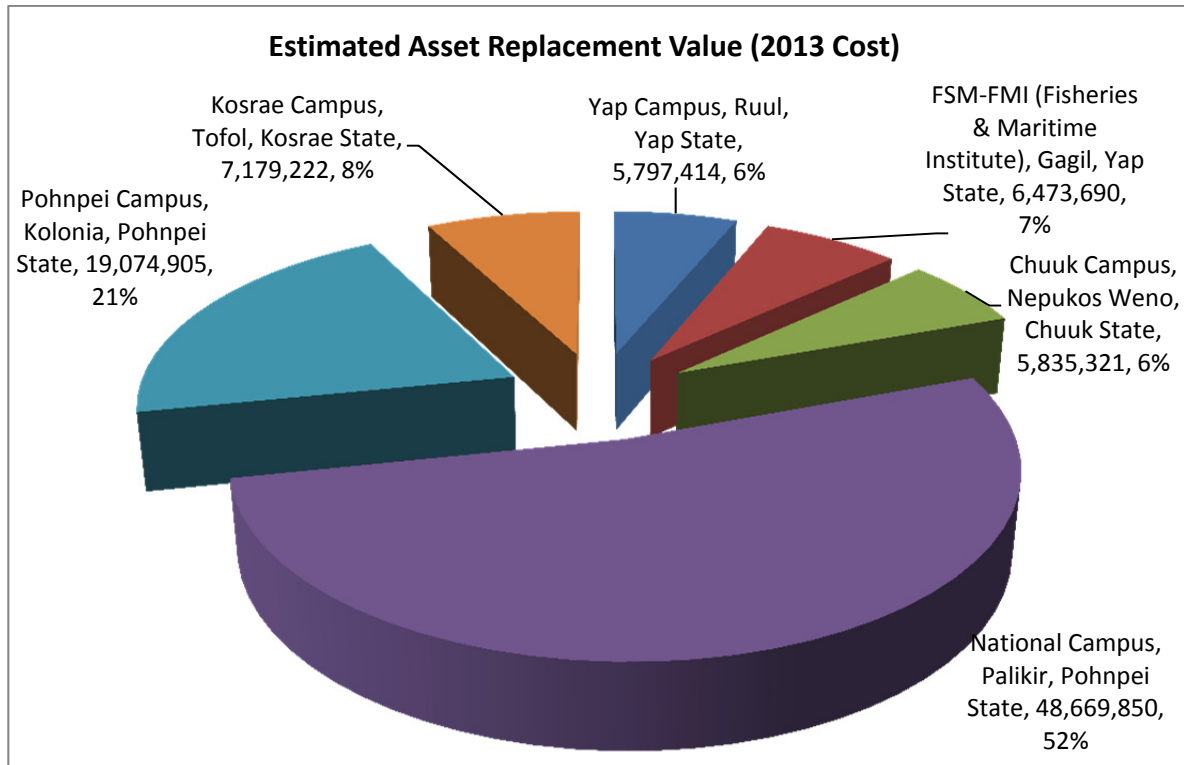
Ref	Campus	Estimated Full Replacement Cost	Annualised Total Operational Cost (Excluding Escalation)	Total Year 1-10 Operational Cost (\$USD) Excluding Escalation	Total Year 11-20 Operational Cost (\$USD) Excluding Escalation	Total Year 21-30 Operational Cost (\$USD) Excluding Escalation
		Cost (\$ USD) Excluding Escalation				
1.00	Yap Campus, Ruul, Yap State	5,797,414	168,167	1,186,683	1,603,286	2,255,042
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	6,473,690	222,348	1,915,988	2,542,092	2,212,369
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	5,835,321	195,262	1,702,962	1,861,741	2,293,145
4.00	National Campus, Palikir, Pohnpei State	48,669,850	916,447	7,181,838	11,003,654	9,307,913
5.00	Pohnpei Campus, Kolonia, Pohnpei State	19,074,905	610,302	5,931,315	5,389,036	6,988,723
6.00	Kosrae Campus, Tofol, Kosrae State	7,179,222	226,796	1,631,210	2,345,998	2,826,665
<b>TOTALS EXCLUDING ESCALATION</b>		93,030,402	2,339,322	19,549,997	24,745,807	25,883,857

**Forecast Operational Costs – Including Escalation (USE THESE AMOUNTS FOR FUNDING)**

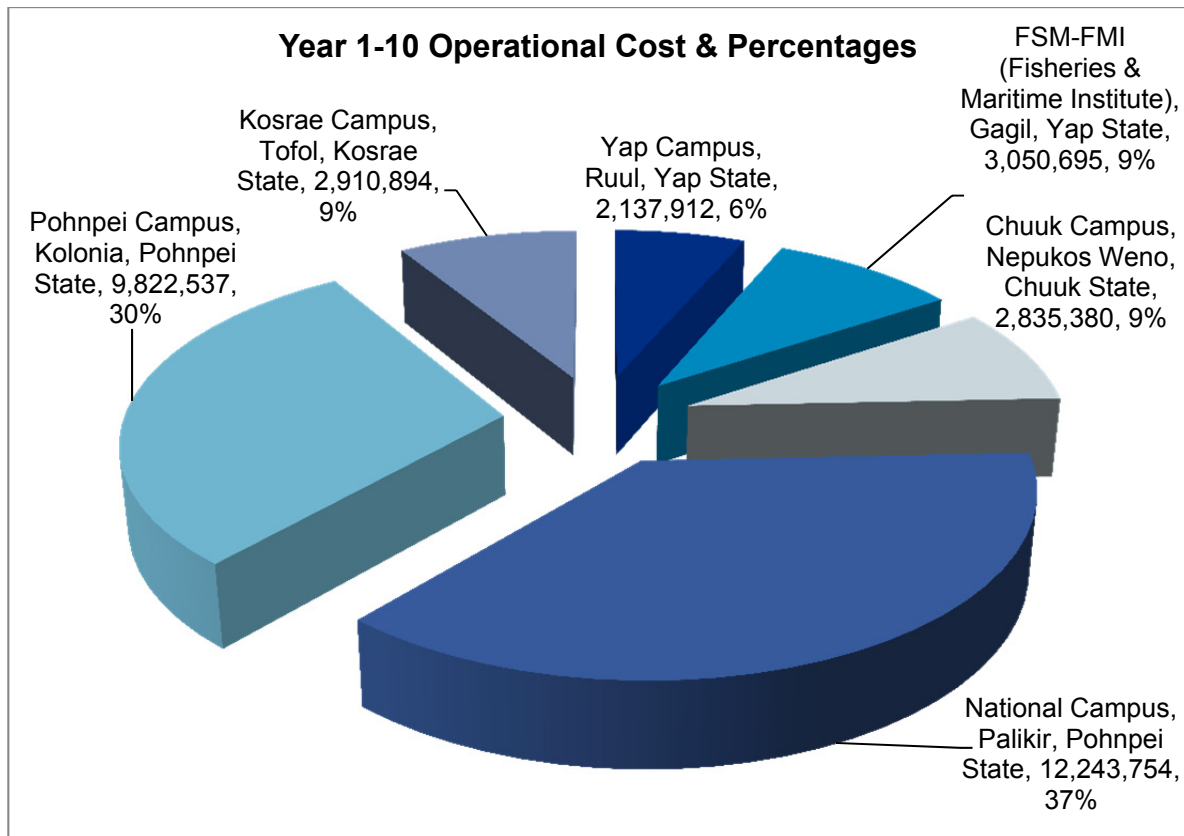
Ref	Campus	Annualised Total Operational Cost (Including Escalation)	Total Year 1-10 Operational Cost (\$USD) Including Escalation	Total Year 11-20 Operational Cost (\$USD) Including Escalation	Total Year 21-30 Operational Cost (\$USD) Including Escalation
1.00	Yap Campus, Ruul, Yap State	362,061	2,137,912	3,201,481	5,522,434
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	441,158	3,050,695	4,840,302	5,343,741
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	404,042	2,835,380	3,694,252	5,591,638
4.00	National Campus, Palikir, Pohnpei State	1,849,675	12,243,754	20,875,228	22,371,255
5.00	Pohnpei Campus, Kolonia, Pohnpei State	1,239,311	9,822,537	10,641,118	16,715,684
6.00	Kosrae Campus, Tofol, Kosrae State	479,714	2,910,894	4,556,998	6,923,526
<b>TOTALS INCLUDING ESCALATION</b>		4,775,961	33,001,171	47,809,378	62,468,278

The forecast Operational Costs (including escalation) as outlined in the above table are suggested for funding and budgeting purposes. Annualised costs are the total operational costs spent over a 30 year period (divided by 30).

The estimated replacement cost (2013 costs) of the COM-FSM assets on the six campuses is approximately \$US93M (excluding land, loose furniture and equipment). Outlined below is the breakdown of the asset replacement costs per campus.



The Operational Cost and Percentages table (below) highlights where CoM-FSM needs to invest in asset renewal and routine maintenance to maximise the life of the existing capital assets, to prevent deterioration and to avoid additional capital replacement expenditure.



The forecast operational costs (\$US33M for Years 1-10 equates to approximately \$US3.3M per year average) identified above are significantly higher than the \$US150,000 per annum that is currently being budgeted for maintenance by COM-FSM. The forecast operational cost equates to approximately 2.5% of the estimated asset replacement cost (based on Year 1 operational and replacement costs). Historically in New Zealand institutional and corporate organisations invest in the order of 3-4% of the replacement cost into operational costs. We consider that the forecast operational costs as outlined above are necessary to operate and maintain the capital investment already made by the COM-FSM.

### 8.11.3 Results/Findings for Individual Campuses

Refer to “College of Micronesia - FSM Space Utilization and Facilities Masterplan Study, Part 3 for detailed reports for the Condition Assessment of each individual campus which contains a more detailed analysis of forecast Operational costs. Dashboards recording individual building condition grades and the top five elements requiring urgent maintenance, renewal or replacement are included in the appendices of the Part 3 campus specific Asset Condition reports. Refer to Appendix D in this study for the summary of the indicative asset renewal and maintenance plan

## 8.12 Conclusions & Recommendations

The conclusions and recommendations from the Asset Condition Assessment are:

1. There is a significant amount of deferred asset renewals and maintenance which is increasing the amount of deterioration in the assets.
2. The current COM-FSM operational budget of \$150,000 per annum is insufficient to meet both maintenance and the periodic renewal of building element requirements.
3. Unless the current Operational budget is increased the condition of the assets will continue to deteriorate and the number of buildings requiring replacement (and consequently additional capital replacement funding) will increase.
4. The forecast Operational budget for the six campuses for Years 1-10 is estimated at \$US33M including escalation (assumed at 3.4% per annum). No detailed economic modelling has been completed and it is recommended that this is carried out to ascertain the future ‘cost of money’ which may influence funding requirements.
5. Any Operational cost savings, which may be achieved, from replacing buildings by the current (proposed) campus Facilities Planning process have not been considered in this forecast and are addressed separately.
6. A clear, well organised asset renewal and routine maintenance plan needs to be developed and implemented. An indicative asset renewal and maintenance cost plan has been included in Appendix D.
7. Regular monitoring and review of the asset renewal and routine maintenance plan and the asset condition needs to be carried out.
8. This assessment ignores integration issues with future developments identified in the Development Strategy component of this Facilities Study. This assessment is based purely on the visual condition of the existing buildings and ignores the practicalities of whether the buildings are suitable for refurbishment or should demolished and replaced (this is to be determined by the Development Strategy component of this Facilities Study).



### 8.13 Limitations of the Condition Assessment

The life cycle and renewal/replacement projections used in our report are indicative only as they are predictions of future circumstances, which cannot be assured. Actual results may vary from the projections and these variations may be significantly more or less favorable than assumed herein. The findings in this report are current as at the date of inspection (June 2013) and not at the date of this report.

All estimated asset/capital replacement costs are high-level and indicative with an accuracy range of +/- 30%. Please note that these costs exclude all Government Goods and Services Taxes, Import/Customs Duties, Design/Procurement Costs, etc.

All estimated operational costs reflect capital replacement and maintenance works only of the buildings and site infrastructure.

All costs are detailed in the data sheets and spreadsheets (refer appendices) are current as at June 2013. Escalation of the Operational Costs have been added to the overall cost summaries. Escalation is assumed to be 3.4% per annum.

This assessment is not a health and safety audit. Beca does not accept liability for any client health and safety issues whether reported or not. Any issues arising from the possible presence of contaminated or potentially toxic materials onsite, (e.g. asbestos) are excluded from this report. This report does not constitute an environmental audit and no allowance has been made for the presence of any such materials should they exist at the subject property.

Our building condition audit is based on a visual assessment of the buildings and site infrastructure only. Furthermore the visual assessment was not a detailed engineering survey of the assets. cursory observations have been made of the following specialist elements however our report will not include for detailed investigation reports such as:

- Building Code of Compliance issues
- Building structures (e.g. Structural integrity, building subsidence, structural decay, etc)
- Health and safety issues (e.g. asbestos, contaminated fill, leaky buildings, etc)
- Mechanical services such as heating and ventilation
- Electrical services such as power, lighting and building management systems
- Information & technology and communication systems
- Sanitary plumbing and drainage
- Water reticulation
- Fire services
- Vertical transportation such as lifts and escalators
- Security

Whilst each building's structure was inspected for defects such as settlement, spalling, cracking and bowing, etc it should be noted that this was an exterior visual assessment of the exposed parts of the building structures for the purpose of assigning condition grades and was not a structural engineering assessment of the buildings.

The building condition audit does not include for the inspection of sub-floor voids, roof/ceiling voids, plenum spaces or other areas that are difficult to access or could trigger health and safety issues.

Our report will include a condition assessment of the roof surfaces, however these will be observed from ground level. No underground services have been able to be assessed. No detailed inspections (e.g. removal of wall linings etc) have been carried out.

The building condition audit will not include for destructive testing of building elements which is normally associated with identifying extensive damage as a result of weather tightness issues. Problems potentially relating to leaky buildings and weather tightness will be flagged for further investigation.

The preparation of this report does not imply in any way that Beca has audited the financial statements, management accounts, engineering or other records of the COM-FSM Where another party has supplied information for use in this report, it is assumed to be reliable.

This report should not be reproduced or used for any other purpose without Beca's prior written permission in each instance.

Beca reserves the right, but not the obligation, to review all calculations included or referred to in this report and, if considered necessary, to revise its opinion in the light of any information existing at the site visit which becomes known after

## 8.14 Assumptions Made in the Condition Assessment

It has been assumed that:

- The rate of escalation over the next 30 years will be an average of 3.4% per annum.
- The existing buildings will be retained (this ignores the possible re-development of buildings as proposed by the Development Strategy component of this Facilities Study)

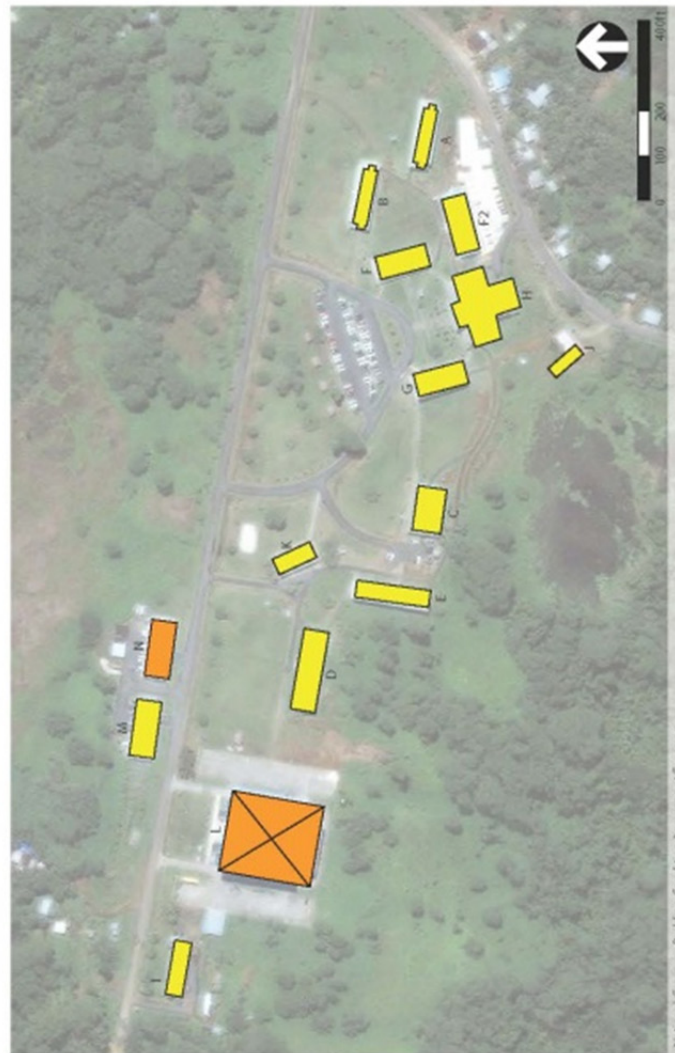
## 8.15 Exclusions from the Condition Assessment and Forecast Operational Costs

The following has been excluded from the Condition Assessment and forecast Operational Costs:

- Replacement of loose furniture, fittings and equipment.
- The cost of renewal or maintenance of buildings that are leased (it is assumed that the building owners will carry out renewals and maintenance)
- All other College operating costs such as energy bills, teaching & administration staff salaries and expenses, disposables, vehicles, tools, machinery, rental equipment, property/building leasing costs, travel costs, insurances etc.
- The Total Cost of Ownership has not been calculated as part of this study. It is assumed that the COM-FSM will use the operational costs (maintenance plus asset renewal costs) provided as an input to their build-up of the total cost of ownership.
- Taxes, duties and government fees or charges.

## 8.16 Campus Condition Grading Summary Plans

### National Campus



No.	Building Description	
A	Specialized classrooms (Building A)	I Agriculture
B	Standard classrooms (Building B)	J A + Center and Art Classroom
C	Dining Hall	K Book store, Dispersary, Student Services
D	Men's Residence Hall	L FSM - China Friendship Sports Center
E	Women's Residence Hall	M Security, Weights Room, IT Shop
F	Faculty Offices (old)	N Maintenance, OSE, Music Classroom
F2	Faculty Offices (new)	
G	Administration	
H	Learning Resources Center and IMTC	

Chuuk Campus



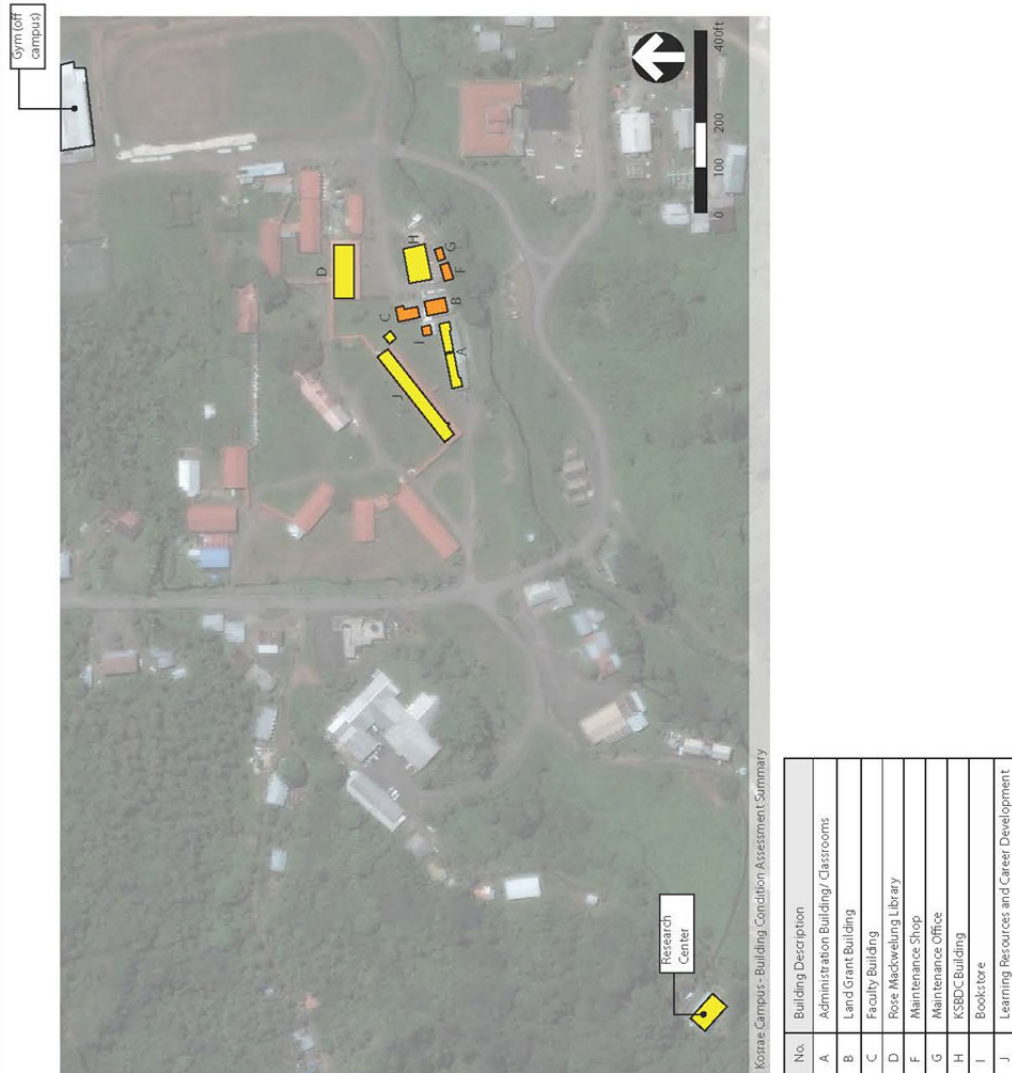
**LEGEND**  
(Summary of Building and Element Condition Grades)

Very Good (0-20%)	Good (20-50%)	Average (40-60%)	Poor (50-80%)	Very Poor (>80%)	Buildings shown crossed have a poor structural condition grade
Green	Yellow	Orange	Red	Dark Red	Red X

Chuuk Campus - Building Condition Assessment Summary

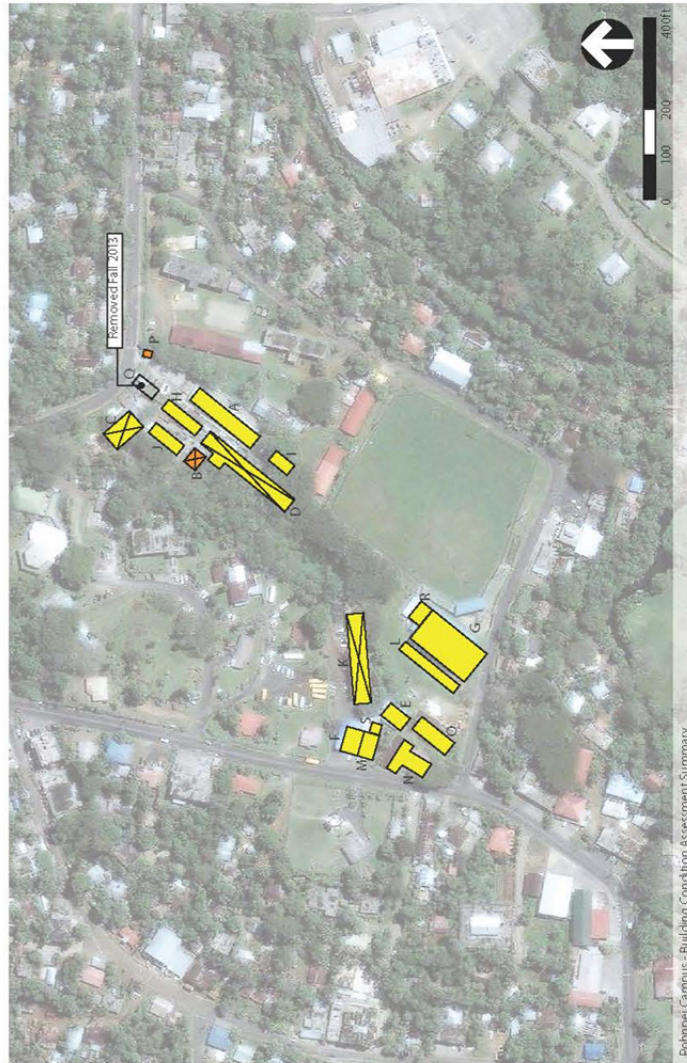
No.	Building Description
A	Administration / Faculty Office
B	Classroom Building B
C	Classroom Building C
D	Campus Dean's Office
E	Restrooms
F	CBE Building
G	Generator House
H	Student Services Building
I	Computer Lab
J	Student Center
K	Learning Resources Center

## Kosrae Campus





Pohnpei Campus



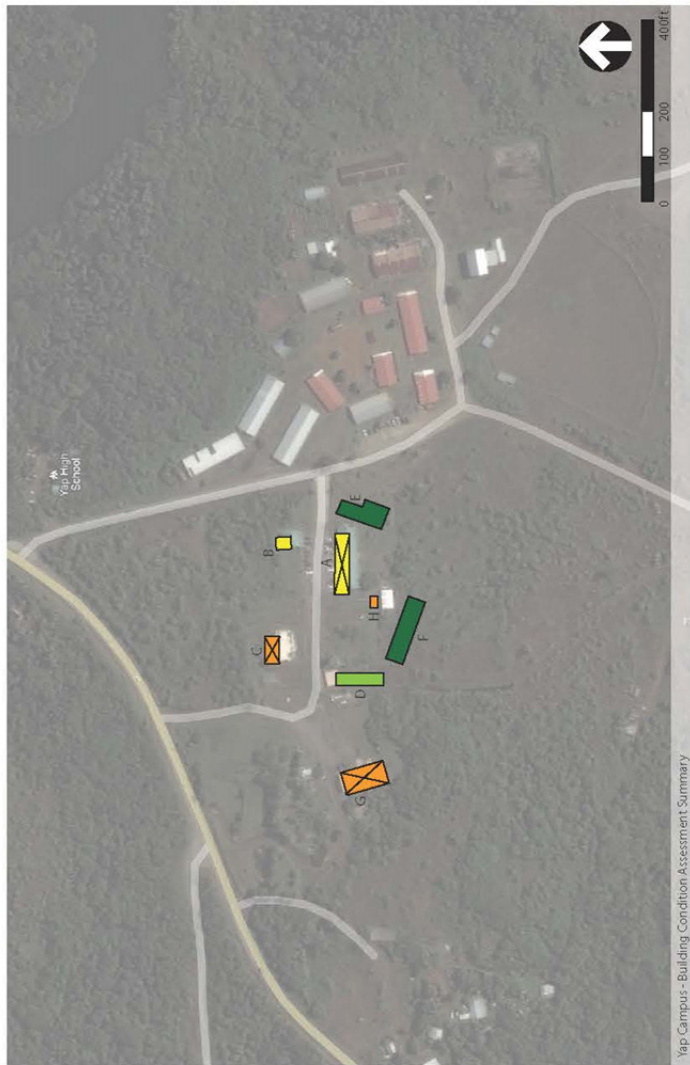
**LEGEND**  
(Summary of Building and Element Condition Grades)

Very Good (0-20%)
Good (20-50%)
Average (40-60%)
Poor (50-80%)
Very Poor (>80%)
Buildings shown crossed have a poor structural condition grade

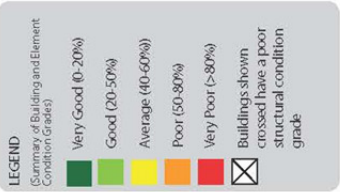
No.	Building Description	
A	Administration Building	K Vocational classrooms, TSP, LIB, CES
B	Bookstore	L Student Services Center
C	I.C. Building/ Electronics classrooms	M Mechanic Shop
D	Classroom Building A	N Land Grant Building
E	Electrical Building	O PSBDC Building
F	Carpentry Shop	P Security Shed
G	Gymnasium	Q Nabs (removed Fall 2013)
H	Hotel and Tourism Building	R Maintenance Building
I	IT Shop	S Refrigeration Shop
J	Classroom Building B	



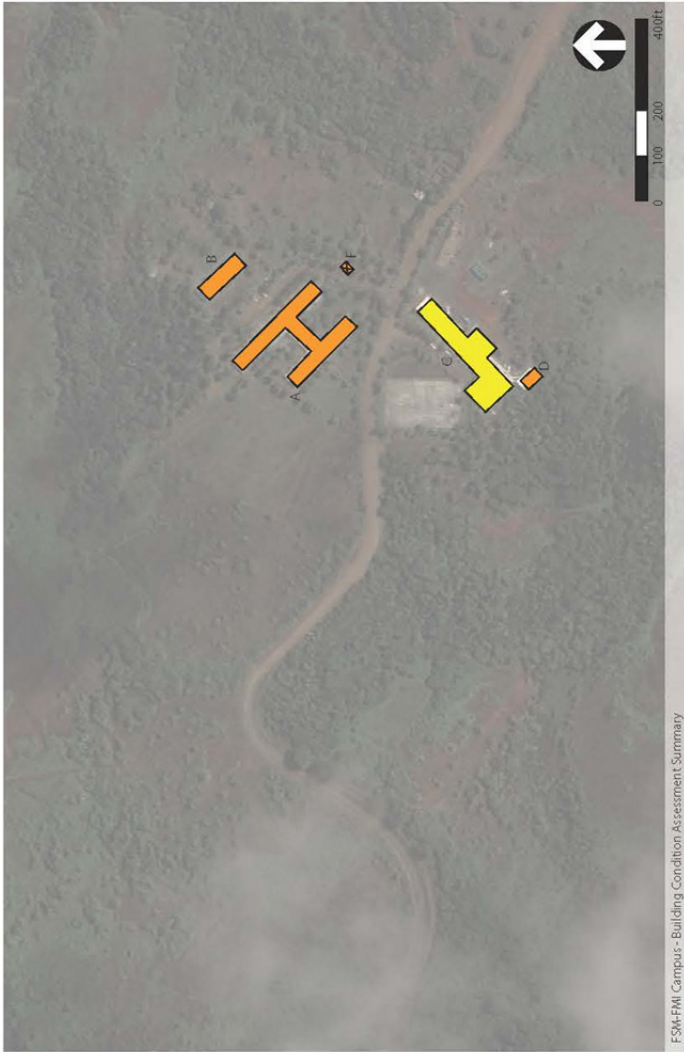
Yap Campus



No.	Building Description
A	Administration Building
B	Computer Lab
C	CPE Building
D	Science Laboratory
E	Student Center Building
F	Classroom Building
G	Vocational Building
H	Student Open Lounge



FSM - FMI



## 9 Space Utilization and Facilities Study Rough Order of Cost Estimate

### 9.1 Assumptions Made in the Rough Order of Cost Estimate

A number of assumptions have been made in the preparation of the rough order of cost estimates. These assumptions include the following:

- Fit-out costs for desks, chairs and loose furniture have been assumed at \$10/ft<sup>2</sup>. No allowance has been made for any additional furniture, fittings and equipment required.
- The estimates have been prepared in both current (2013) costs with escalation allowances identified separately. The rate of escalation has been assumed to be 3.4% per annum. The actual escalation amounts assume construction within the time period identified in the re-development programme. No escalation for construction of projects outside of this timeframe has been allowed for.
- Architectural and engineering fees have been assumed to average 15% across all projects.
- A contingency allowance of 15% has been included across all projects. This allowance will require confirmation at developed design stage when the project scope and risks will be better understood.

### 9.2 Exclusions from the Rough Order of Cost Estimate

The following are excluded from the rough order of cost estimates:

- No allowance for data projectors, computers, printers and associated hardware and software, photocopiers etc. has been made,
- Property purchase and leasing costs,
- Relocation of staff, fittings and equipment on the existing Chuuk Nepukos Weno campus to the proposed Nantaku site.
- Any demolition or holding costs associated with the Chuuk campus Nepukos Weno site (after relocation to the proposed Nantaku site),
- Taxes, duties and fees.

### 9.3 Limitations to the Rough Order of Cost Estimate

These estimates are rough order of cost estimates and are based on highly conceptual information. No detailed investigation or design has been carried out. Accordingly these rough order of cost estimates are not a statement of absolute cost and have an accuracy range that is no better than -20% to +30%. Because of this wide accuracy range it is assumed that all estimates will be confirmed at developed design stage (where the project scope and risks will be better understood) and prior to making funding applications.

### 9.4 Summary of Rough Order of Cost Estimates

The purpose of the rough order of cost estimates is to inform the COM-FSM Facilities Master Plan of the potential cost of re-development of the COM-FSM campuses. The potential order of cost for the proposed re-development of the COM-FSM campuses is summarized in the table below.

COM-FSM Space Utilization and Facilities Study Rough Order of Cost Estimate Summary - All	Buildings, Services & Siteworks \$USD (2013 cost)	Allowance for Fit-out \$USD (2013 cost)	TOTAL \$USD (2013 cost)	Allowance for Escalation (3.4% pa)	TOTAL Escalated Cost \$USD
All Projects					
<b>CoM (all Campuses) 5 year period to 2018</b>					
Yap	3,205,000	100,000	3,305,000	137,000	3,442,000
FSM - FMI	1,438,000	40,000	1,478,000	60,000	1,538,000
Chuuk	19,035,000	645,000	19,680,000	799,000	20,479,000
National	5,665,000	160,000	5,825,000	238,000	6,063,000
Pohnpei	4,955,000	145,000	5,100,000	225,000	5,325,000
Kosrae	4,450,000	120,000	4,570,000	175,000	4,745,000
<b>TOTAL CoM (All Campuses) 5 Year Period to 2018</b>	<b>38,748,000</b>	<b>1,210,000</b>	<b>39,958,000</b>	<b>1,634,000</b>	<b>41,592,000</b>
<b>CoM (All Campuses) 10 year vision (2019 to 2023)</b>					
Yap	4,120,000	230,000	4,350,000	214,000	4,564,000
FSM - FMI	725,000	35,000	760,000	37,000	797,000
Chuuk	4,235,000	135,000	4,370,000	205,000	4,575,000
National	2,075,000	75,000	2,150,000	102,000	2,252,000
Pohnpei	945,000	25,000	970,000	46,000	1,016,000
Kosrae	2,880,000	55,000	2,935,000	145,000	3,080,000
<b>TOTAL All Campuses - 10 year vision (2019 to 2023)</b>	<b>14,980,000</b>	<b>555,000</b>	<b>15,535,000</b>	<b>749,000</b>	<b>16,284,000</b>
<b>CoM (All Campuses) Long term vision (Beyond 2023)</b>					
Yap	4,375,000	100,000	4,475,000	215,000	4,690,000
FSM - FMI	740,000	0	740,000	35,000	775,000
Chuuk	0	0	0	0	0
National	1,000,000	0	1,000,000	50,000	1,050,000
Pohnpei	5,410,000	170,000	5,580,000	265,000	5,845,000
Kosrae	4,555,000	200,000	4,755,000	231,000	4,986,000
<b>TOTAL All Campuses - Long Term Vision (Beyond 2023)</b>	<b>16,080,000</b>	<b>470,000</b>	<b>16,550,000</b>	<b>796,000</b>	<b>17,346,000</b>
<b>CoM (All Campuses) Further Projects</b>					
Yap	600,000	0	600,000	35,000	635,000
FSM - FMI	1,150,000	0	1,150,000	55,000	1,205,000
Chuuk	500,000	0	500,000	25,000	525,000
National	500,000	0	500,000	25,000	525,000
Pohnpei	820,000	0	820,000	50,000	870,000
Kosrae	1,130,000	0	1,130,000	55,000	1,185,000
<b>TOTAL CoM (All Campuses) Future Projects</b>	<b>4,700,000</b>	<b>0</b>	<b>4,700,000</b>	<b>245,000</b>	<b>4,945,000</b>
<b>GRAND TOTAL (All Campuses)</b>	<b>74,508,000</b>	<b>2,235,000</b>	<b>76,743,000</b>	<b>3,424,000</b>	<b>80,167,000</b>

As noted above the proposed re-development of the COM-FSM campuses totals \$US76.743M in 2013 present day costs and totals \$US80.167M including escalation allowances. Refer to Appendix E for more detail regarding the rough order of cost estimates

## 10 Asset Valuation (Following Campus Project Plan Initiatives)

The following table is a summary of our estimated asset valuation pre and post implementation of the campus project plan initiatives. This assessment displays the current asset value (i.e. estimated full replacement value); the total estimated capital improvements and an estimated forecast of asset value on completion of the projects. The findings of this assessment are as tabled below:

### Summary of Asset Value

	Current Estimated Asset Value (Base Assessment)	Estimated Capital Improvements (As Per Master Plan)	Estimated Asset Value (On Completion of MP Projects)			
Campus	Estimated Full Replacement Cost of Existing Asset (\$ USD)	Total Capital Improvements (\$ USD)	Asset Value after Capital Improvements (\$ USD)	Increase on Asset Value (\$ USD)	Increase on Asset Value (%)	Variance on Asset Value vs Capital Improvements (\$ USD)
Yap Campus	5,797,414	12,730,000	16,295,892	10,498,478	181.09%	-2,231,522
FSM-FMI (Fisheries & Maritime Institute)	6,473,690	4,128,000	10,504,738	4,031,048	62.27%	-96,952
Chuuk Campus	5,835,321	24,550,000	30,300,321	24,465,000	419.26%	-85,000
National Campus	48,669,850	9,475,000	57,999,850	9,330,000	19.17%	-145,000
Pohnpei Campus	19,074,905	12,470,000	23,897,250	4,822,345	25.28%	-7,647,655
Kosrae Campus	7,179,222	13,390,000	18,389,272	11,210,051	156.15%	-2,179,949
<b>Total</b>	<b>93,030,402</b>	<b>76,743,000</b>	<b>157,387,323</b>	<b>64,356,922</b>	<b>69.18%</b>	<b>-12,386,078</b>

Please refer to Appendix D for further detail on the above assessment. All of the above figures exclude escalation costs and Government taxes etc.

The following points should be noted in respect of the above assessment:

### Chuuk Campus (Nepukos Weno Site & Nantaku Site)

The Asset Valuation after Capital Improvements of \$30,300,321 is the combined total of both the existing Nepukos Weno site and the proposed new Nantaku site. Please note that the Asset Valuation after Capital Improvements for the Nepukos Weno site only is approximately USD \$6,700,000 (Note: At full replacement value). Consideration should be given to the actual market value of the assets located at the Nepukos Weno site for potential resale as this may be considerably less than the full replacement value stated above.

### Variance on Asset Value vs Capital Improvements

Please note that the variance of USD -\$12,386,078 relates to Master Plan projects that are of demolition, enabling, temporary works nature or 'like for like' building/site infrastructure replacement. These projects will not increase the overall asset value but will provide other physical benefits such as better functioning teaching facilities and/or reduced operational costs. Under the current Master Plan capital improvement strategy, every \$1.00 USD spent is returning approximately \$0.69 increase in asset value.

## 10.1 Master Plan Impacts on Operational Costs

As part of this study we have reviewed the operational cost model in conjunction with the Master Plan initiatives. This assessment generally aims to provide an adjusted (but theoretical) operational cost model after implementation of the proposed Master Plan projects over a 30 year period. The analysis covers the effects of capital improvements made to an existing asset base recognising that some of the master plan projects could increase or discharge part (or all) of the operational costs (i.e. asset renewal and maintenance cost obligations).

Operational cost adjustments have been assessed for each campus on a building and site infrastructure line level basis. The assessment broadly considers the planned period of Master Plan project implementation (Note: 10 year blocks have been used for this assessment) and factor increases/decreases operational costs according to asset value and operational cost trends. For example, a run-down building with a condition grade of 4 to 5 (being the worst grade range) will be reset to a condition grade of 1 if refurbished. This in-turn results in a lower and more cost efficient operational cost model. The findings of this analysis are as tabled below:

### Summary of 1-10Y Operational Cost Forecast

Campus	1-10Y Capital Improvements (\$ USD)	1-10Y Base Operational Cost (\$ USD)	1-10Y Adjusted Operational Cost on Completion of MP Projects (\$ USD)	1-10Y Variance on Operational Cost on Completion of MP Projects (\$ USD)	1-10Y Variance on Operational Cost on Completion of MP Projects (%)
Yap Campus	7,655,000	1,186,683	537,613	-649,071	-120.73%
FSM-FMI (Fisheries & Maritime Institute)	2,238,000	1,915,988	1,891,635	-24,353	-1.29%
Chuuk Campus	24,050,000	1,702,962	417,130	-1,285,832	-308.26%
National Campus	7,975,000	7,181,838	7,181,838	0	0.00%
Pohnpei Campus	6,070,000	5,931,315	2,161,034	-3,770,281	-174.47%
Kosrae Campus	7,505,000	1,631,210	1,222,277	-408,934	-33.46%
<b>Total</b>	<b>55,493,000</b>	<b>19,549,997</b>	<b>13,411,527</b>	<b>-6,138,470</b>	<b>-45.77%</b>

### Summary of 11-20Y Operational Cost Forecast

Campus	11-20Y Capital Improvements (\$ USD)	11-20Y Base Operational Cost (\$ USD)	11-20Y Adjusted Operational Cost on Completion of MP Projects (\$ USD)	11-20Y Variance on Operational Cost on Completion of MP Projects (\$ USD)	11-20Y Variance on Operational Cost on Completion of MP Projects (%)
Yap Campus	4,475,000	1,603,286	1,675,972	72,686	4.34%
FSM-FMI (Fisheries & Maritime Institute)	740,000	2,542,092	2,637,453	95,361	3.62%
Chuuk Campus	0	1,861,741	1,263,625	-598,116	-47.33%
National Campus	1,000,000	11,003,654	11,426,879	423,225	3.70%
Pohnpei Campus	5,580,000	5,389,036	3,857,886	-1,531,150	-39.69%



Campus	11-20Y Capital Improvements (\$ USD)	11-20Y Base Operational Cost (\$ USD)	11-20Y Adjusted Operational Cost on Completion of MP Projects (\$ USD)	11-20Y Variance on Operational Cost on Completion of MP Projects (\$ USD)	11-20Y Variance on Operational Cost on Completion of MP Projects (%)
Kosrae Campus	4,755,000	2,345,998	2,123,990	-222,008	-10.45%
<b>Total</b>	<b>16,550,000</b>	<b>24,745,807</b>	<b>22,985,805</b>	<b>-1,760,002</b>	<b>-7.66%</b>

### Summary of 21-30Y Operational Cost Forecast

Campus	21-30Y Capital Improvements (\$ USD)	21-30Y Base Operational Cost (\$ USD)	21-30Y Adjusted Operational Cost on Completion of MP Projects (\$ USD)	21-30Y Variance on Operational Cost on Completion of MP Projects (\$ USD)	21-30Y Variance on Operational Cost on Completion of MP Projects (%)
Yap Campus	600,000	2,255,042	2,830,383	575,341	20.33%
FSM-FMI (Fisheries & Maritime Institute)	1,150,000	2,212,369	2,471,619	259,249	10.49%
Chuuk Campus	500,000	2,293,145	2,412,375	119,230	4.94%
National Campus	500,000	9,307,913	10,188,388	880,475	8.64%
Pohnpei Campus	820,000	6,988,723	6,038,343	-950,380	-15.74%
Kosrae Campus	1,130,000	2,826,665	2,957,959	131,294	4.44%
<b>Total</b>	<b>4,700,000</b>	<b>25,883,857</b>	<b>26,899,067</b>	<b>1,015,210</b>	<b>+3.77%</b>

### Summary of 30Y Operational Forecast

Campus	Total 30Y Capital Improvements (\$ USD)	Total 30Y Base Operational Cost (\$ USD)	Total 30Y Adjusted Operational Cost on Completion of MP Projects (\$ USD)	30Y Variance on Operational Cost on Completion of MP Projects (\$ USD)	30Y Variance on Operational Cost on Completion of MP Projects (%)
Yap Campus	12,730,000	5,045,011	5,043,968	-1,043	-0.02%
FSM-FMI (Fisheries & Maritime Institute)	4,128,000	6,670,450	7,000,708	330,257	4.72%
Chuuk Campus	24,550,000	5,857,848	4,093,130	-1,764,718	-43.11%
National Campus	9,475,000	27,493,404	28,797,104	1,303,700	4.53%
Pohnpei Campus	12,470,000	18,309,074	12,057,263	-6,251,811	-51.85%
Kosrae Campus	13,390,000	6,803,873	6,304,226	-499,648	-7.93%
<b>Total</b>	<b>76,743,000</b>	<b>70,179,661</b>	<b>63,296,398</b>	<b>-6,883,262</b>	<b>-10.87%</b>

Please refer to Appendix D for further detail on the above assessment.

Please note that this assessment is indicative only and should not be relied upon as absolute or final for budgetary planning purposes. All of the above figures are based dated in 2013 dollars and exclude

escalation costs, Government taxes and other costs associated with the day-to-day running of campuses (i.e. management, administration and energy costs, etc).

The above findings demonstrate major operational cost benefits for the Chuuk and Pohnpei campuses which is due to a combination of new building/site infrastructure development (taking place of existing run-down facilities) and general consolidation and reduction of building space needed. A bulk of the operational cost savings (i.e. 45.77%) are realised in the first 10 year period where a majority of the capital improvement projects (i.e. USD \$55,493,000) would take place.

By year 30 the total asset value is forecast to be USD \$157,387,323 (i.e. an increase from the current asset replacement value of USD \$93,030,402 by 69.18%). At the end of this period there is also a forecast reduction in operational costs of -\$6,883,262 (or -10.87%). Please note that beyond 30 years, operational costs will increase significantly on the new development projects as asset renewal cycles reach the end of maturity. Operational costs extending beyond 30 years have not been forecast and are specifically excluded from this assessment.

## 10.2 Optimised Maintenance Strategy

Upon review of the annual maintenance cost results, Beca have reviewed possible alternatives to executing a maintenance regime. The most obvious alternative to reducing maintenance expenditure is to reduce the frequency of maintenance across all campuses. This is not advised as it could potentially compromise the asset renewal cycle (and the overall operational cost) as a result of elements not being maintained to an appropriate level prescribed by manufacturers/suppliers and other international standards. The frequency of maintenance allowed for in the base assessment is considered to be already optimised and set at an appropriate level to service the asset maintenance and renewal requirements under a normal commercial model.

Another suggested approach to reducing the maintenance cost burden is to implement a voluntary maintenance regime (utilising COM-FSM students) across all campuses to undertake low skill level maintenance activities. This regime may also deliver other positive (but passive) benefits such as a sense of ownership and upkeep of the facilities by students. Beca has undertaken a resource requirements/cost benefit analysis for deploying a combined voluntary labour (VL) and employed/contract labour (ECL) maintenance regime. This assessment also recognises that some maintenance activities must be undertaken by skilled trades or employed professionals in specialised fields. The results of this analysis are as summarised below:

### Annual Summary of Voluntary Labour Requirements and Cost Benefits (Combined Buildings & Site Infrastructure)

Campus	ECL (Base) Maint. Cost Assessment (\$ USD)	VL & ECL Maint. Cost Assessment (\$ USD)	Total Cost Saving (\$ USD)	Total Cost Saving (%)	Total Voluntary Labour Required (Hours)
Yap Campus	45,130	32,735	-12,395	-37.87%	4,132
FSM-FMI (Fisheries & Maritime Institute)	44,942	33,951	-10,991	-32.37%	3,664
Chuuk Campus	47,673	35,129	-12,543	-35.71%	4,181
National Campus	207,427	155,374	-52,053	-33.50%	17,351
Pohnpei Campus	151,580	118,117	-33,463	-28.33%	11,154
Kosrae Campus	57,116	44,044	-13,072	-29.68%	4,357
<b>Total</b>	<b>553,868</b>	<b>419,350</b>	<b>-134,517</b>	<b>-32.08%</b>	<b>44,839</b>

## ECL – Employed or Contract Labour / VL – Voluntary Labour

Please refer to Appendix D for further detail on the above assessment.

Please note that this assessment is indicative only and should not be relied upon as absolute or final for budgetary planning use. All of the above figures are based dated in 2013 dollars and exclude escalation costs, Government taxes and other costs associated with the day-to-day running of campuses (i.e. management, administration and energy costs, etc).

The annual voluntary labour assessment of 44,839 hours for the buildings and site infrastructure maintenance works could potentially be met by the existing student roll (i.e. numbering approximately 2,500). This would equate to a commitment of approximately 18 hours per student (or 2 days per annum) as a voluntary maintenance service and could potentially deliver approximately USD \$135,000 per annum in savings.

The following (and not limited to) maintenance activities could be undertaken as part of the voluntary service:

- Washing down and cleaning of buildings externally (roof cladding, clearing out gutters, wall cladding, doors and windows, etc).
- Painting the building envelope (roof and wall cladding) and internal finishes.
- General cleaning internally (walls, floors and ceiling finishes).
- Basic servicing/cleaning of split system air-conditioning systems.
- Support with grounds keeping including (mowing, spraying, tree pruning etc).
- Washing, cleaning, painting and repair of minor structures and external furniture.
- Other more skilled and technical areas deemed appropriate to support the current teaching curriculum (e.g. mechanical, electrical, plumbing and drainage services).

## 10.3 Maintenance Cost Benefit Analysis

In New Zealand the life span of a fully maintained building is expected to be in the order of approximately 50 years as a minimum. These buildings are exposed to harsh environmental elements such as corrosion in coastal areas, adverse weather (humidity, high winds, storms, etc) and earthquakes. Yet there is a high rate of building stock in New Zealand that have performed well against these severe elements and have undergone minor asset renewal works. The common factors behind this trend are the thorough maintenance regimes that are deployed (i.e. spend money now to save on substantial cost later). For example, under these principles a roof cladding that is washed and repainted on regular programmed cycles could last much longer than its prescribed life span. Buildings and infrastructure however can be more susceptible to and will have an inherently higher frequency of asset renewal cycles (e.g. teaching institutions, hospitals and other public use buildings). This is highly dependent on the asset function, volume of human traffic, period of use and environment.

Beca have undertaken a high level Maintenance Cost Benefit Analysis to assess the benefits of implementing a thorough maintenance regime. These benefits can generally be summarised as lower asset renewal cost and extended life of built assets as a result of revival back to a good maintainable base condition. Please note that forecasting cost benefit is a highly subjective exercise involving predictions of how long elements will last if maintained as required. The results of the assessment below are purely for illustrative purposes and should not be referred to as absolute or final.

**Summary of Maintenance Cost Benefit Analysis (Buildings Only)**

	A	B	C = A - B	D	E = C - D
Element	30Y Asset Renewal Cost (\$ USD)	30Y Asset Renewal Cost if Maintained (\$ USD)	30Y Asset Renewal Cost Saving (\$ USD)	30Y ECL Maint. Cost (\$ USD)	Cost Benefit Over 30Y (\$ USD)
External Wall & Roof Cladding	7,752,167	3,876,084	3,876,084	3,606,675	269,408
External Windows & Doors	2,903,577	2,073,984	829,594	403,275	426,319
Structure – Miscellaneous	2,310,000	1,732,500	577,500	866,250	-288,750
Floor Finishes	6,168,664	4,626,498	1,542,166	252,354	1,289,812
Internal Wall Linings	6,030,328	4,020,219	2,010,109	700,289	1,309,820
Ceiling & Soffit Linings	3,204,134	2,136,089	1,068,045	434,104	633,941
Internal Doors	569,700	406,929	162,771	474,750	-311,979
Internal Fit-Out – Miscellaneous	583,750	437,813	145,938	875,625	-729,688
Fire Supp. Detection & Alarm	855,415	855,415	0	416,896	-416,896
Mechanical Ventilation	115,500	77,000	38,500	231,000	-192,500
A/C Systems	7,335,429	4,279,000	3,056,429	1,167,000	1,889,429
Hot Water Generation	60,000	45,000	15,000	180,000	-165,000
Electrical Services	5,132,490	3,849,367	1,283,122	420,972	862,150
Hydraulic Services	2,107,000	1,580,250	526,750	451,500	75,250
Comm. Systems	1,710,830	1,710,830	0	802,500	-802,500
Vertical Transport	48,750	39,000	9,750	75,000	-65,250
Internal Fit-Out – Miscellaneous	1,145,000	858,750	286,250	858,750	-572,500
<b>Total</b>	<b>48,032,734</b>	<b>32,604,728</b>	<b>15,428,007</b>	<b>12,216,940</b>	<b>3,211,066</b>

Please refer to Appendix D for further detail on the above assessment. All of the above figures are based dated in 2013 dollars and exclude escalation costs, Government taxes and other costs associated with the day-to-day running of campuses (i.e. management, administration and energy costs, etc).

Please note that the above assessment is based on a standard commercial maintenance model (i.e. including direct employed labour and contract labour) and does not take into account a voluntary based maintenance regime.

The above cost benefit analysis saving result of \$3,211,066 (6.7% of the baseline expected asset renewal cost) could be considered as a low value (or neutral) outcome in monetary terms when viewed over a 30 year period. However, the tangible benefits of maintaining assets as prescribed could ultimately result in an intact/robust asset for the future (i.e. beyond 30 years) with a renewed or extended life expectancy.

It is advised that maintenance strategies be planned in accordance with the over-arching Master Plan to ensure that all efforts are targeted appropriately on assets set for long term use and minimised on assets due to be decommissioned (e.g. phase out buildings that are not economically viable to repair and/or are no longer required). This will in-turn help reduce the operational cost burden.

# 11 Common Energy Review Actions

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## 11.1 Introduction

Energy Efficiency is one of the four primary components of the FSM Energy policy.

The Energy Audit workstream was commissioned to review the performance of the site in terms of its current energy usage.

Currently the vast majority of electricity consumed on site is provided from a local grid connection, with electricity produced by diesel fuelled generators.

### CoM-FSM Goals

The major goal of the national energy policy is “to become less dependent on imported sources of energy”, and that “by 2020...energy efficiency will increase by 50%”.

Further to this the IEMP for COM-FSM, contains the goals of “implementing best practices for energy conservation”, and “Developing and utilizing alternative sources of energy” with the goal of saving natural resources and hence revenue expenditure.

### Actions Taken

To help in achieving the above goals in the context of COM-FSM, the following works have been undertaken.

- Review and analysis of the following data sources
  - Analysis of current energy use from review of energy bills
  - Review of how energy is used, the efficiency of energy use and benchmarking across campuses.
- Based on the above, identify key recommendations across all campuses, and specific recommendations on a campus-by-campus basis.

### Recommended Methodology:

To achieve the above, the following steps are generally recognised as being the most effective way of reducing energy consumption.

1. Reduce to a minimum energy wastage. These measures are generally “low hanging fruit”: simple and low cost to implement, but can have a significant impact on energy usage. Measures include:
  - a. Turning off lights / computers etc when not in use
  - b. Measures such as increasing the setpoint of air conditioning units
2. Maximise Energy Efficiency. These measures have a capital cost associated, but can be incorporated as part of an on-going scheduled replacement cycle of equipment. Measures include:
  - a. Replace light fittings with high efficiency models. Modern LED light fittings have a payback time of 3-5 years over compact florescent fittings, and have an additional benefit of longer life and reduced on-going maintenance.

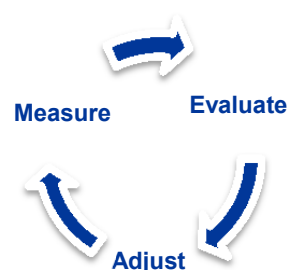
- b. Ensure plant is operating at its maximum efficiency by provided regular planned preventative maintenance – e.g. cleaning filters etc.
  - c. When replacing plant or equipment, select models providing an optimum balance of capital cost and running efficiency.
3. Integrate renewable energy technologies - it is important to ensure that any renewable technologies are introduced in an integrated and effective way, and can be maintained long term. These would generally form separate capital expenditure projects, such as:
- a. Photovoltaic electricity generation, Solar hot water generation

If steps 1 and 2 have been completed prior to undertaking step 3, this ensures that any renewable energy generated is being used effectively, rather than used in-efficiently, or wasted by un-necessary use.

## 11.2 Recommendations

A key component in improving energy efficiency is the ability to assess progress.

The National Campus is leading the way with full records of each buildings energy use for the last 3 years. This is the standard which all campuses should attain to allow accurate tracking of the effectiveness of energy reduction strategies implemented.



In reviewing the data available, several trends became apparent across all campuses.

Identified Issue	Proposed Improvement
Records of Energy Usage	Review of metering to all sites (with exception of the National Campus), with installation of additional meters to provide a more focussed view of energy usage.
Electrical Use	Ensure all lights and computers are turned off when not in use. Consider installation of occupancy sensors to control lighting where appropriate.
	Replace magnetic ballast to existing lights with electronic
Air Conditioning	Set points of units often very low (16°C). Setting units to achieve a temperature of 24 or 25° will allow the units to operate far more efficiently.
	Close windows when systems are operating, and seal any holes in air conditioned spaces
Planned Preventative Maintenance	Ensure planned preventative maintenance is carried out to keep plant operating efficiently and to prolong plant life. E.g. regular washing of outdoor units to reduce corrosion, ensure filters are clean and un-obstructed etc.



The energy usage data has been analysed using electricity usage per unit floor area (kWh / ft<sup>2</sup>) as a measure to account for the large variation in size of the sites. Directly comparing “raw” energy usage is not appropriate as it does not take into account that one campus may be larger or smaller than another.

These figures indicate that targeting permanently occupied spaces such as offices, admin areas etc will provide the greatest potential for energy saving.

Engagement of staff, facilities staff and students will be key in achieving a sustained reduction in energy usage, and the use of educational literature, energy saving competitions, and regular updates on energy performance can all be used to maintain interest.

## Appendix A

# Gap Analysis and Input Summary

Click here and  
then click  
'insert picture'

Report

# College of Micronesia – FSM Gap Analysis and Input summary

**Prepared for College of Micronesia –FSM (Client)**

**By Beca International Consultants Ltd (Beca)**

4/08/2013

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## Revision History

Revision N°	Prepared By	Description	Date
A	Annette Jones	Draft for review by PCG by 9 <sup>th</sup> August	4 <sup>st</sup> August 2013

## Document Acceptance

Action	Name	Signed	Date
Prepared by	Annette Jones		31/07/13
Reviewed by	Fraser Vickers		31/07/13
Approved by	Fraser Vickers		31/07/13
on behalf of	Beca International Consultants Ltd		

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## Appendices

**Appendix A - Spatial review inputs register**

**Appendix B - Request for Information register**

**Appendix C - Schedule of available building information (plans and room numbers)**

**Appendix D - Campus directory for the Facilities Masterplan**

**Appendix E - COM-FSM Personnel list**

## 1 Introduction

This gap analysis report is the first deliverable of the College of Micronesia – FSM Facilities masterplan and is one of the outputs for Phase 1 – Information gathering and analysis phase.

The purpose of the gap analysis process is to identify the level of existing information available, information gaps and further information required. For each workstream any issues with the available base information is summarised along with a proposed way forward for the consideration of the Project Control Group (PCG).

Information has been provided by the College of Micronesia – FSM, Sandy Pond Associates and information gathered on site visits. Detail on the spatial review inputs has been documented in an **Inputs Register**. The information received from the condition assessment and energy audit workstreams is summarised in table form within this report.

Requests for specific information have been formally made through a **Request for Information** process along with specific email requests. A register of requests provides a summary of this process.

For clarity a summary of the information requested and received is divided in this report into the following relevant workstreams;

**Section 2** - Spatial review

**Section 3** - Condition assessment

**Section 4** - Energy audit

### 1.1 Requested review process by the Facilities Masterplan PCG

A review box is provided for each item to be reviewed and signed off by the Project Control Review Group. Please indicate acceptance by circling the tick box – if not in agreement circle the cross

box. 

Please also provide any comment at the bottom of the table. Sign off of these parts of the gap analysis will enable progress with Phase 2 – Design principles

The appendices provide more detail on the information requested and received along with an outline of the reports that will be referred to in the development of the Facilities Masterplan report.







## 2 Spatial review information

### 2.1 Information required –as identified in the proposal

- College of Micronesia – FSM vision, mission and masterplan drivers
- Understanding of current and future educational needs
- Campus directory identifying preferred campus building names and notation
- Building plans identifying names and numbers for each of the rooms within each campus building






### 2.2 Summary of information received

Information required	Information received	PCG Review box
College of Micronesia – FSM vision, mission and masterplan drivers	The current College of Micronesia –FSM provides a valuable information resource. The overarching document that will be referred to is the IEMP. Further documents that will be referred to are listed in the Inputs register in <b>Appendix A</b> .	 <b>PCG ACTION REQUIRED:</b> PCG to review Appendix A and identify any further input documents to be considered
Understanding of current and future educational needs , space utilisation data	Sandy Pond Associates Educational Assessment Component report - 80% issue	
Campus directory identifying preferred campus building names and notation	Based on campus directory contained in the COM-FSM 2013 online catalog. Minor amendments provided by Director of Maintenance, Facilities and Security and provided in map form in <b>Appendix D</b> .	 <b>PCG ACTION REQUIRED:</b> PCG to review Appendix D and confirm acceptance
Building plans identifying names and numbers for each of the rooms within each campus building	<b>Nothing received</b> <b>INFORMATION GAP:</b> Names and numbers not available for all buildings - refer to summary spreadsheet in <b>Appendix C</b> - Schedule of building information available	

**PCG COMMENT:**





### 2.2.1 Further relevant information provided during Phase 1 – information gathering and analysis phase

During the first Spatial Review site visit in June 2013 a range of further information not identified in the proposal that would be relevant and useful for the Facilities Masterplan was provided in meetings with President Joe Daisy, Vice President Joe Habuchmai, Francisco Mendiola (Director of Maintenance, Facilities and Security) and Wilson Hess (Sandy Pond Associates).

Further information identified	Description and status	PCG Review box
Student feedback on the physical environment	Further discussion with Student Services (Joey Oducado ) and Frankie Harriss with President Joe Daisy prior to the second Spatial Review visit to identify how to best capture this input	
ACCJC Accreditation information, evaluation reports	Links taken from COM-FSM website. Reference reports outlined in the Inputs register, refer to <b>Appendix A</b>	 <b>PCG ACTION REQUIRED:</b> PCG to review Appendix A and identify any further input documents to be considered
Building size and classroom area	Spreadsheet provided with room schedule, total building area and toilet provision for - Chuuk campus	
Reference information for spatial ratios to inform toilet ratios, administration and teaching areas	American Architects standard is referenced currently by Francisco Mendiola (Director of Maintenance, Facilities and Security). Yap campus new buildings referenced to design standards including NZ/ AS standards	
Reference to LEED standard in accreditation review	The approach is that LEED standard principles are considered alongside and balanced with climate appropriate design methods and material selection	

**PCG COMMENT:**

## 2.3 Gaps and way forward

Identified gap	Way forward	PCG agreement to way forward
Building plans identifying names and numbers for each of the rooms within each campus building	Site measure undertaken with hand mark ups of overall room dimensions and overall building. COM maintenance to identify rooms on provided handdrawn .pdf plan for input into spatial schedules. <b>IMPLICATION: IMPACT ON PROGRAM</b>	
Understanding of future educational requirements and impact on facilities planning	Video-conference meeting to capture this input with personnel identified by the PCG	
Identification of all relevant people to speak with regard to the Spatial review. Information to be gathered either by video-conference prior to the second spatial review trip or face to face meetings during this trip in August 2013.	PCG to identify relevant personnel from the Personnel listing copied from the COM-FSM online catalog. Refer to <b>Appendix E</b> . <a href="http://www.comfsm.fm/publications/catalog-2013-2014/personnel-listing.pdf">http://www.comfsm.fm/publications/catalog-2013-2014/personnel-listing.pdf</a>	
Quantification and identification of reliable and ongoing funding source	Input will be sought from Vice President Joe Habuchmai on any variations to the Total Cost of Ownership paper on the second Spatial Review visit	









### PCG COMMENT:





### 3 Condition assessment information

#### 3.1 Information required –as identified in the proposal

- Scaled digitised plans of the buildings on each campus in .pdf format. These plans would include at a minimum the attributes of each room in a building (size and location). Any further services and structural plans that can be made available would assist in understanding the construction and servicing of existing buildings.
- Campus directory identifying preferred campus building names and notation
- CAD survey plans for all campuses (except FSM-FMI campus on Yap). Survey to identify site boundaries, road location, footpaths, levels, services, vegetation and building footprints.
- Current maintenance/ financial records and program
- Records of known issues with building and infrastructure
- Payback periods and budget









#### 3.2 Summary of information received

Information required	Information received	PCG Review box
Scaled digitised plans of the buildings on each campus in .pdf format. These plans would include at a minimum the attributes of each room in a building (size and location). Any further services and structural plans that can be made available would assist in understanding the construction and servicing of existing buildings.	Digitised plans available for only approximately half of the campus buildings with large variations of information available between campuses.  Plans available are from COM-FSM either in scanned or cad form are coloured orange on the Building Identification plans contained in <b>Appendix D</b> <b>INFORMATION GAP:</b> Plans not available for all campus buildings <b>IMPLICATION: IMPACT ON PROGRAM</b> – time required site measure existing buildings for which drawings are unavailable	 
Campus directory identifying preferred campus building names and notation	An agreed campus directory is contained in <b>Appendix D</b>	 
CAD survey plans for all campuses (except FSM-FMI campus on Yap). Survey to identify site boundaries, road location, footpaths, levels, services, vegetation and building footprints.	CAD survey plans received for; Yap, Chuuk, Pohnpei, National and Kosrae campuses	 
Current maintenance/ financial records and program	Schedule provided identifying 2012 to 2017 major repairs and renovations by building for each campus	 

Records of known issues with building and infrastructure	Infrastructure questionnaire sent prior to the site visit with questions on building and infrastructure information, known issues.  Questionnaires completed for all campuses	 
Payback periods and forward budget	<b>NO DETAILED BREAKDOWN RECEIVED</b> Total operational cost projected budgets contained in the IEMP used as a reference.	 




**PCG COMMENT:****3.2.1 Further relevant information provided during Phase 1 – information gathering and analysis phase**

During the Condition Assessment site visit in June 2013 a range of further information not identified in the proposal that would be relevant and useful for the Facilities Masterplan was identified in meetings with Francisco Mendiola (Director of Maintenance, Facilities and Security) and during the site visit.

Further information identified	Description and status	PCG Review box
Buildings maintained by COM-FSM and identification of buildings maintained by others	The following buildings will not form part of the condition assessment and maintenance program Pohnpei campus - Land Grant building (N) - UB and TSP Trio building (K) Kosrae campus - Half of the Rose Mackwellung building (D) used by COM-FSM - Gear up building (E) - Building H - ground floor	 
Appliances Inventory	Appliances inventory (electrical appliances) for; - Kosrae Campus - FSM-FMI campus	 
Mechanical Plant Inventory	Air conditioning schedule identifying model and voltage information as well as building and room location for each unit - Chuuk - Kosrae - National campus	 
Utility Expense Records	National campus - power and water expenses from January to June 2013	 

**PCG COMMENT:**

### 3.3 Gaps and way forward

Identified gap	Way forward	PCG agreement to way forward
Plans available for approximately only half campus buildings	Basic overall building and room site measurement information will be used as an input into schedules to inform the spatial review.	 <b>PCG INPUT:</b> Any detailed spatial schedules similar to the Chuuk campus would be of assistance for the spatial review
Plans of below ground services	Confirm the current built in-ground infrastructure – preferably any as built plans. Scans of any drawings held on file would be useful – these can be transferred by Accellion large email transfer	
Capital replacement and maintenance budgets	Confirmation on current budget for operations firstly and maintenance secondly for the next 5 year period per campus per annum Please identify; <ol style="list-style-type: none"> <li>1. Budget for replacement costs</li> <li>2. And secondly budget for maintenance costs</li> </ol> (to illustrate with an example - replacement cost of a split A/C unit versus Maintenance costs of servicing an A/C) Identification of other budget sources and these figures.	 <b>PCG INPUT:</b> Budget outline following discussion with Mark Wilson (Beca)


**PCG COMMENT:**



## 4 Energy audit information

### 4.1 Information required –as identified in the proposal


- Energy consumption records (3 years of power bills preferred)

Information required	Information received	PCG Review box
Energy consumption records (3 years of power bills preferred)	<p>National campus – spreadsheet with Kwh usage per building. Data from 2010 to 2013. Schedule of monthly water and power costs for 2010 and 2011.</p> <p>Pohnpei - 4 months of power consumption data per building in 2012</p> <p>Kosrae campus - monthly power consumption report for 2012</p> <p>Yap campus - March 2011 to January 2012 spreadsheet of individual building power usage per month</p> <p>Chuuk campus - One month of Kwh usage per building -2012 data</p>	

**PCG COMMENT:**


#### 4.1.1 Further relevant information provided during Phase 1 – information gathering and analysis phase

During the Condition Assessment site visit in June 2013 a range of further information not identified in the proposal that would be relevant and useful for the Facilities Masterplan was identified in meetings with Francisco Mendiola ( Director of Maintenance, Facilities and Security)

Further information identified	Description and status	PCG Review box
Three phase building supply	All campuses spreadsheet provided by COM maintenance identifying single and three phase buildings	

**PCG COMMENT:**

## 4.2 Gaps and way forward

Identified gap	Way forward	PCG agreement to way forward
Any further energy bills available	PCG to clarify if there is any information available - particularly for Pohnpei and Chuuk campuses would be useful	

**PCG COMMENT:**

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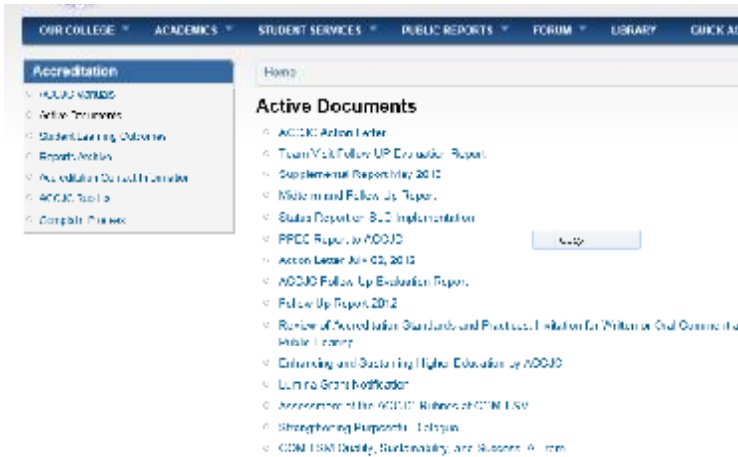
Appendix A

## Inputs register

## College of Micronesia, Inputs register

### 1 Spatial review

No.	Input	Internet link	Meridio link	Date Received
1	Links from COM_FSM website on accreditation	<p><a href="http://www.accjc.org/wpcontent/uploads/2013/06/Accreditation-Reference-Handbook_2013.pdf">http://www.accjc.org/wpcontent/uploads/2013/06/Accreditation-Reference-Handbook_2013.pdf</a></p> <p>page 19</p> <p><b>B. Physical Resources</b> Physical resources, which include facilities, equipment, land, and other assets, support student learning programs and services and improve institutional effectiveness. Physical resource planning is integrated with institutional planning.</p> <ol style="list-style-type: none"> <li>1. The institution provides safe and sufficient physical resources that support and assure the integrity and quality of its programs and services, regardless of location or means of delivery.               <ol style="list-style-type: none"> <li>a. The institution plans, builds, maintains, and upgrades or replaces its physical resources in a manner that assures effective utilization and the continuing quality necessary to support its programs and services.</li> <li>b. The institution assures that physical resources at all locations where it offers courses, programs, and services are constructed and maintained to assure access, safety, security, and a healthful learning and working environment.</li> </ol> </li> <li>2. To assure the feasibility and effectiveness of physical resources in supporting institutional programs and services, the institution plans and evaluates its facilities and equipment on a regular basis, taking utilization and other relevant data into account.               <ol style="list-style-type: none"> <li>a. Long-range capital plans support institutional improvement goals and reflect projections of the total cost of ownership of new facilities and equipment.</li> <li>b. Physical resource planning is integrated with institutional planning. The institution systematically assesses the effective use of physical resources and uses the results of the evaluation as the basis for improvement.</li> </ol> </li> </ol> <p><a href="http://www.comfsm.fm/accreditation/manuals/2011/Addendum-to-Std-IIID_Guide-to-Evaluating-Institutions.pdf">http://www.comfsm.fm/accreditation/manuals/2011/Addendum-to-Std-IIID_Guide-to-Evaluating-Institutions.pdf</a> Accreditation looks at these items for physical resources - page 52 and 53</p> <p><a href="http://www.accjc.org/wp-content/uploads/2012/08/Guide-to-">http://www.accjc.org/wp-content/uploads/2012/08/Guide-to-</a></p>		

		Evaluating-Institutions_August-2012.pdf  page 44		
2	COM-FSM accreditation references from the College website	<a href="http://www.comfsm.fm/?q=accred-docs">http://www.comfsm.fm/?q=accred-docs</a> 		
3	COM-FSM Integrated Educational Masterplan	<a href="http://www.comfsm.fm/vpia/misc/IEMP.pdf">http://www.comfsm.fm/vpia/misc/IEMP.pdf</a>  Integrated educational masterplan (note item 5 - Physical facilities) <a href="http://www.comfsm.fm/vpia/misc/IEMPsheet.pdf">http://www.comfsm.fm/vpia/misc/IEMPsheet.pdf</a>		
4	COM-FSM Integrated Educational Masterplan reference list	Appendix A: <i>External Scan</i> . Retrieved from <a href="http://www.comfsm.fm/vpia/misc/External%20Environmental%20Scan.pdf">http://www.comfsm.fm/vpia/misc/External%20Environmental%20Scan.pdf</a>  Appendix B: <i>Internal Scan</i> . Retrieved from <a href="http://www.comfsm.fm/vpia/misc/Appendix%20B.pdf">http://www.comfsm.fm/vpia/misc/Appendix%20B.pdf</a>		

		<p>Appendix C: <i>Determination of Future Space Needs, Financial Plan and Total Cost of Ownership</i>. Retrieved from <a href="http://www.comfsm.fm/vpia/misc/AppendixAJh.pdf">http://www.comfsm.fm/vpia/misc/AppendixAJh.pdf</a></p> <p>(2013, January). <i>Board of Regents Strategic Institutional Outcomes and Input for the COM-FSM Vision</i>. Retrieve from <a href="http://www.comfsm.fm/vpia/misc/COM.Strategic.Institutional.Outcomes.2013.docx">http://www.comfsm.fm/vpia/misc/COM.Strategic.Institutional.Outcomes.2013.docx</a></p> <p>(2013, January). <i>Board of Regents Two-Year Action Agenda (2013-2015)</i>. Retrieved from <a href="http://www.comfsm.fm/vpia/misc/Two.Year.Action.Agenda.2013.docx">http://www.comfsm.fm/vpia/misc/Two.Year.Action.Agenda.2013.docx</a></p> <p>COM-FSM. (2011, February). <i>College of Micronesia Technology Plan</i>. Retrieved from <a href="http://www.comfsm.fm/irpo/files/masterplan/Technology-Plan-CURRENT-2011_02.pdf">http://www.comfsm.fm/irpo/files/masterplan/Technology-Plan-CURRENT-2011_02.pdf</a></p> <p>COM-FSM. (2013, April). <i>The College of Micronesia – FSM Strategic Plan 2013-2017 draft</i>. Retrieved from <a href="http://wiki.comfsm.fm/@api/deki/files/2286/=Strategic-Plan-Draft_6APR13.pdf">http://wiki.comfsm.fm/@api/deki/files/2286/=Strategic-Plan-Draft_6APR13.pdf</a></p> <p>COM-FSM. (2012, May). <i>Integrated Educational Master Plan Template</i>. Retrieved from</p> <p>COM-FSM Council of Chairs. (2012, May). <i>Participatory Governance Policy at COM-FSM</i>. Retrieved from <a href="http://www.comfsm.fm/accreditation/files/5-15/Participatory-Governance-Policy.pdf">http://www.comfsm.fm/accreditation/files/5-15/Participatory-Governance-Policy.pdf</a></p> <p>Daisy, J. M. (2012, August). <i>College of Micronesia – FSM: Summit 2012</i>. Retrieved from <a href="http://www.comfsm.fm/irpo/visioning-summit/Visioning-Summit-2012-REPORT.pdf">http://www.comfsm.fm/irpo/visioning-summit/Visioning-Summit-2012-REPORT.pdf</a></p> <p>Daisy, J. M. (2012, February). <i>Confronting challenges...creating our future: President Daisy delivers his investiture address</i>. Retrieved</p>	
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		from <a href="http://www.comfsm.fm/myShark/news/item=144/mod=00:58:20">http://www.comfsm.fm/myShark/news/item=144/mod=00:58:20</a>		
5	COM-FSM - other reports	<p>Daisy, J. M. (2012, April). <i>COM-FSM Quality, Sustainability, and Success: A Framework for Planning and Action</i>.  <a href="http://www.comfsm.fm/irpo/visioning-summit/White-Paper.pdf">http://www.comfsm.fm/irpo/visioning-summit/White-Paper.pdf</a></p> <p>COM-FSM. (2011, February). College of Micronesia Technology Plan. <a href="http://www.comfsm.fm/irpo/files/masterplan/Technology-Plan-CURRENT-2011_02.pdf">http://www.comfsm.fm/irpo/files/masterplan/Technology-Plan-CURRENT-2011_02.pdf</a></p> <p><a href="http://www.comfsm.fm/vpa/er/Emergency_Response_Plan.pdf">http://www.comfsm.fm/vpa/er/Emergency_Response_Plan.pdf</a></p> <p>Total cost of ownership – information on student numbers, campus size and financial info (ops and maintenance)  Appendix C: Determination of Future Space Needs, Financial Plan and Total Cost of Ownership. Retrieved from  <a href="http://www.comfsm.fm/vpia/misc/AppendixAJh.pdf">http://www.comfsm.fm/vpia/misc/AppendixAJh.pdf</a></p> <p>Appendix A: External Scan. Retrieved from  <a href="http://www.comfsm.fm/vpia/misc/External%20Environmental%20Scan.pdf">http://www.comfsm.fm/vpia/misc/External%20Environmental%20Scan.pdf</a>  External environmental scan – population nos.  Appendix B: Internal Scan. Retrieved from  <a href="http://www.comfsm.fm/vpia/misc/Appendix%20B.pdf">http://www.comfsm.fm/vpia/misc/Appendix%20B.pdf</a> student numbers and split (2744 students in 2012)</p> <p><a href="http://www.comfsm.fm/vpia/misc/Two.Year.Action.Agenda.2013.docx">http://www.comfsm.fm/vpia/misc/Two.Year.Action.Agenda.2013.docx</a></p> <p><a href="http://www.comfsm.fm/irp/Planning/Strategic_Plan_2013_17.pdf">http://www.comfsm.fm/irp/Planning/Strategic_Plan_2013_17.pdf</a></p>		

Appendix B

## Request for information

## Request for Information Register

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Job Name	College of Micronesia Facilities Masterplan				
No.	Description	Date Requested	Originator	Beca internal ref (Meridio file no)	Notes on information received
001	Pohnpei campus – building numbers and site information	22/05/2013	Annette Jones	7704217	
002	National campus - building numbers and site information	27/05/2013	Annette Jones		
003	Summary of plan and site information held by the College	27/05/2013	Annette Jones		Site surveys received in cad and.pdf format for all campuses except FSM-FMI campus on Yap
004	Request for information No004 - Chuuk, Yap, Kosrae and FSM-FMI Campus building number and names	30/05/2013	Annette Jones	7704167	
005	College of Micronesia - FSM, National Campus - Building Services Infrastructure Questionnaire	31/05/2103	Mark Wilson		
006	College of Micronesia - FSM, Request for Information No 006 Pohnpei Campus - Building Services Infrastructure Questionnaire	3/06/ 2013	Mark Wilson		
007	College of Micronesia - FSM, Request for Information No 007 Chuuk Campus - Building Services Infrastructure Questionnaire (2).xlsx	5/6/2013	Mark Wilson		
008	RE: College of Micronesia - FSM, Request for Information No 008 FSM-FMI Campus - Building Services Infrastructure Questionnaire (2).xlsx	5/6/2013	Mark Wilson		
009	College of Micronesia - FSM, Request for Information No 009 Kosrae Campus - Building Services Infrastructure Questionnaire (2).xlsx	5/6/2013	Mark Wilson		
010	College of Micronesia - FSM, Request for Information No 010 Yap Campus - Building Services Infrastructure Questionnaire (2).xlsx	5/6/2013	Mark Wilson		

## Request for Information Register

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011	College of Micronesia, FSM Masterplan - Request for Information 011 - - Review and update on Pohnpei Campus information	17/06/2013	Annette Jones	7704135	
012	College of Micronesia, FSM Masterplan - Request for Information 011 - - Review and update on National Campus information	17/06/2013	Annette Jones	7569927	
013	College of Micronesia, FSM Masterplan - Request for Information 011 - - Review and update on Kosrae Campus information	17/06/2013	Annette Jones	7569929	
014	College of Micronesia, FSM Facilities Masterplan - Request for Information 014 - Confirmation of buidings that are maintained by COM-FSM for inclusion in the building condition assessment	18/07/13	Annette Jones		

## Appendix C

# Schedule of available building information

## Number of Facilities for COM-FSM

National Campus				
No.	Building Description	Buildings	Blue Print (Floor Plan)	Room Number
1	Classroom	A	Available	Available
2	Classroom	B	Available	Available
3	Cafeteria	C	Available	Not Available
4	Male Residence Hall	D	Available	Available
5	Female Residence Hall	E	Available	Available
6	Faculty Office	F	Available	Available
7	Faculty Office	F2	Available	Available
8	Administration	G	Available	Not Available
9	LRC	H	Available	Not Available
10	Agriculture	I	Available	Not Available
11	A+Plus Center	J	Available	Not Available
12	Student Services	K	Available	Not Available
13	Gymnasuim	L	Available	Not Available
14	IT Shop/Fitness room/Storage	M	Available	Not Available
15	Maintenance Office & Shop /CRE Office/Music	N	Available	Not Available

LPG Gas house  
 Generator Building Station-1  
 Generator Building Station-2  
 Pig pen-1  
 Pig Pen-2

Pohnpei Campus				
No.	Building Description	Buildings	Blue Print (Floor Plan)	Room Number
1	Administration Building	A	Available	Not Available
2	HTM Classroom	B	Not Available	Not Available
3	Nahs	C	Not Available	Not Available
4	Electronics Classrooms 8&9/Math Science Office	D	Not Available	Not Available
5	Classroom 1-4	E	Available	Available
6	Classroom 5-7	F	Available	Available
7	Bookstore	G	Not Available	Not Available
8	Security Post	H	Not Available	Not Available
9	IT shop	I	Not Available	Not Available
10	UB & TSP (TRIO Programs)	J	Not Available	Not Available
11	PSBDC Building	K	Available	Not Available
12	Electrical Shop	L	Not Available	Not Available
13	Maintenance Shop	M	Not Available	Not Available
14	Gym & Student Service Center	N	Not Available	Not Available
15	COM Land Grant	O	Not Available	Not Available
16	Mechanic and AC refrigerations Shop	P	Not Available	Not Available
17	Carpentry Shop/Classrooms	Q	Not Available	Not Available

Chuuk Campus				
No.	Building Description	Buildings	Blue Print (Floor Plan)	Room Number
1	Administration Building		Not Available	Not Available
2	Faculty Office	A	Available	Not Available
3	Student Center		Not Available	Not Available
4	Computer Lab		Available	Not Available
5	Library		Available	Not Available
6	Student Support Services		Available	Not Available
7	Classroom	B	Available	Available
8	Classroom	C	Available	Available
9	Land Grant		Available	Not Available
10	Restroom Facility		Available	Not Available

Generator house  
 Generator house

Kosrea Campus				
No.	Building Description	Buildings	Blue Print (Floor Plan)	Room Number
1	Administration Building		Available	Not Available



2	Land Library and VOCED Classrooms	Available	Not Available
3	Faculty Office	Not Available	Not Available
4	Land Grant Office	Not Available	Not Available
5	Maintenance Office/Shop	Not Available	Not Available
6	Land Grant Research Laboratory	Not Available	Not Available

Yap Campus		Blue Print (Floor Plan)	Room Number
No.	Building Description	Buildings	
1	Administration Building	Available	Not Available
2	Computer Lab	Not Available	Not Available
3	Land Grant Research Lab	Not Available	Not Available
4	Science Laboratory	Not Available	Not Available
5	Vocational Building	Not Available	Not Available
6	Student Center	Not Available	Not Available
7	Classroom building	Not Available	Not Available
8	Student Open lounge	Not Available	Not Available
9	New Student Center		
10	New Classroom Building		

FSM-FMI		Blue Print (Floor Plan)	Room Number
1	Administration/Student Service and Residence Hall/Mess hall	Not Available	Not Available
2	Staff housing	Not Available	Not Available
3	Classrooms, Library and Shops	Not Available	Not Available
4	Maintenance	Not Available	Not Available

## Appendix D

# Campus directory for the Facilities Masterplan

Director of Facilities and Security: Francisco W. Mendiola

No.	Building Description	Remarks
A	Specialized classrooms (Building A)	2 storey
B	Standard classrooms (Building B)	2 storey
C	Cafeteria	
D	Men's Dormitory	2 storey
E	Women's Dormitory	2 storey
F	Faculty Offices (old)	
F2	Faculty Offices (new)	
G	Administration	2 storey
H	Learning Resources Center and MITC	2 storey
I	Agriculture	
J	A + Center and Art Classroom	
K	Book store, Dispensary	
L	FSM - China Friendship Sports Center	
M	Security, Maintenance, IT Shop	
N	Maintenance, CRE, Music Classroom	



- Floor plans received
- Floor plans not available and basic site measure completed



Campus Dean: Ms. Lourdes Roboman

No.	Building Description	Remarks
A	Administration building	
-	Classrooms	
-	Bookstore	
B	Computer Lab	
C	CRE Building	
D	Science Laboratory	
-	Library	
-	Science Lab	
E	Student Center Building	
F	Classroom Building 6	
G	Vocational Building	
H	Student Open Lounge	

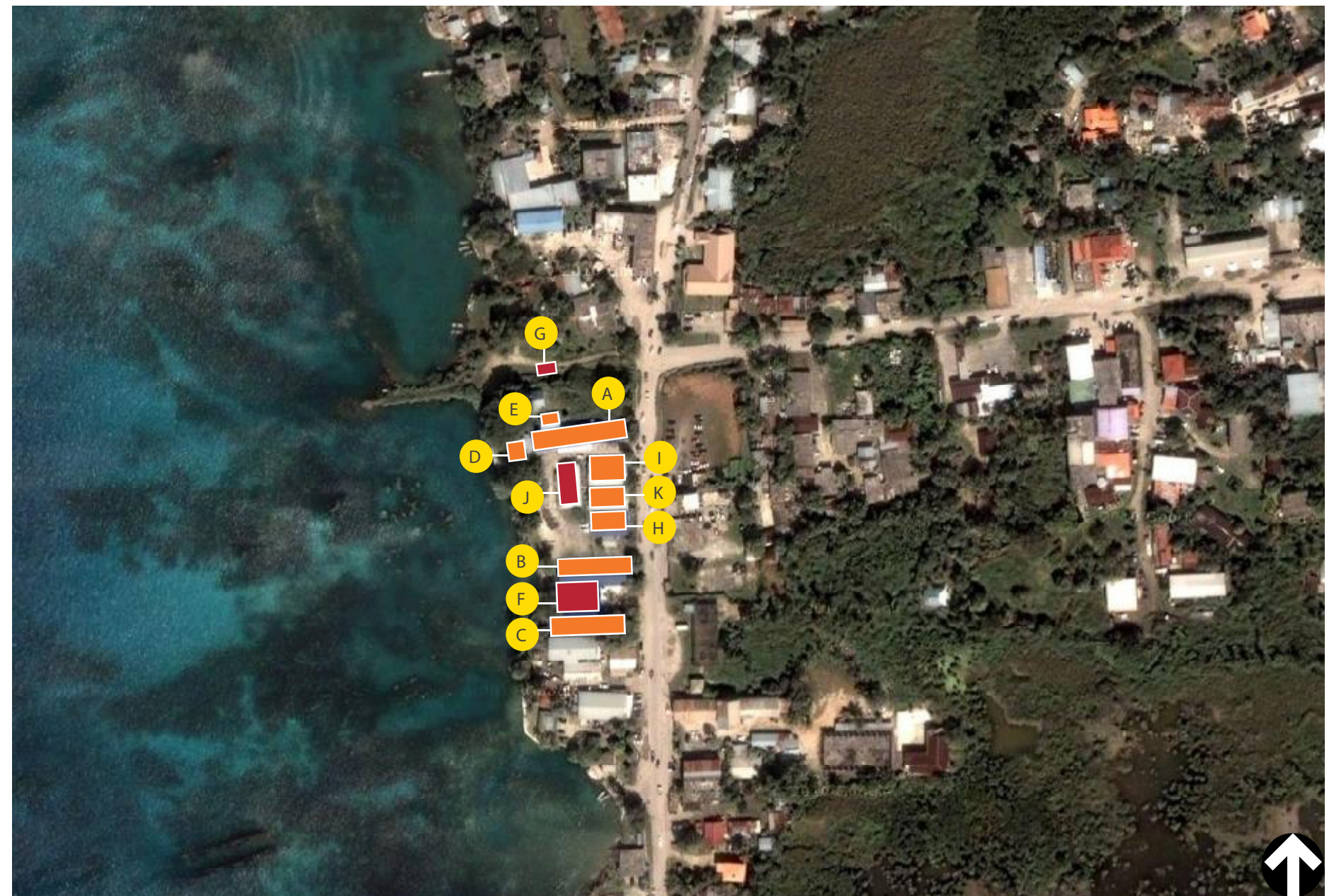


- Floor plans received
- Floor plans not available and basic site measure completed

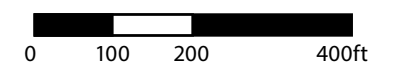


Campus Dean: Mr. Kind Kindo

No.	Building Description	Remarks
A	Faculty Office	
B	Classroom Building B	
C	Classroom Building C	
D	Director's Office	
E	Restrooms	
F	Research Lab	
G	Generator House	
H	Student Services Building	
I	Computer Lab	
J	Student Center	
K	Learning Resources Center	



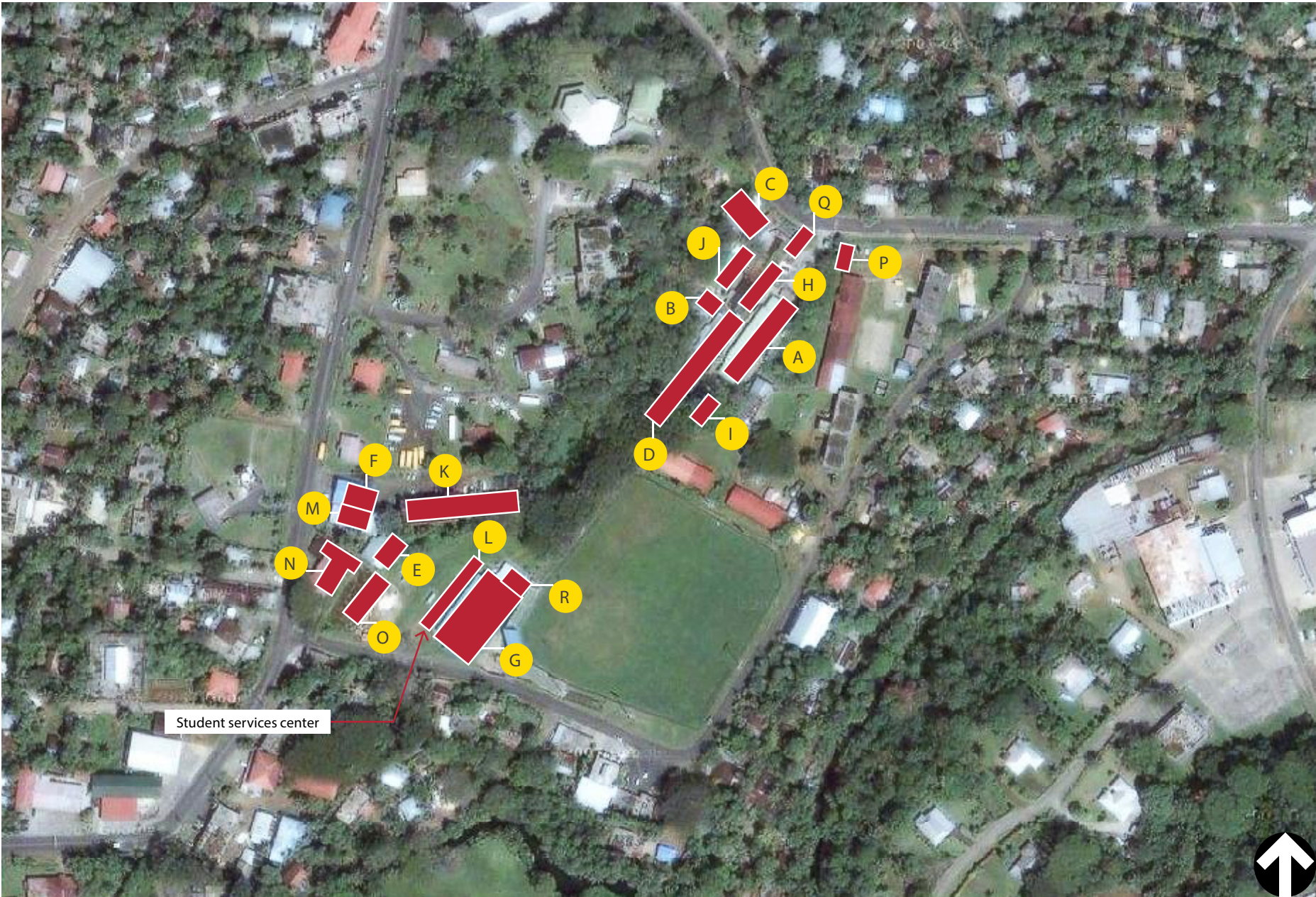
- Floor plans received
- Floor plans not available and basic site measure completed





Campus Dean: Mr. Grilly Jack

No.	Building Description	Remarks
A	Administration Building	
B	Bookstore	
C	I.C. Building	
D	Classroom Building A	
E	Electrical Building	
F	Carpentry Shop	
G	Gymnasium	
H	Hotel and Tourism Building	
I	IT Shop	
J	Classroom Building B	
K	Vocational classrooms, TSP, UB, CES	
L	Student Services Center	
M	Mechanic Shop	
N	Land Grand Building	
O	PSBDC Building	
P	Security Shed	
Q	Nahs	
R	Maintenance Building	

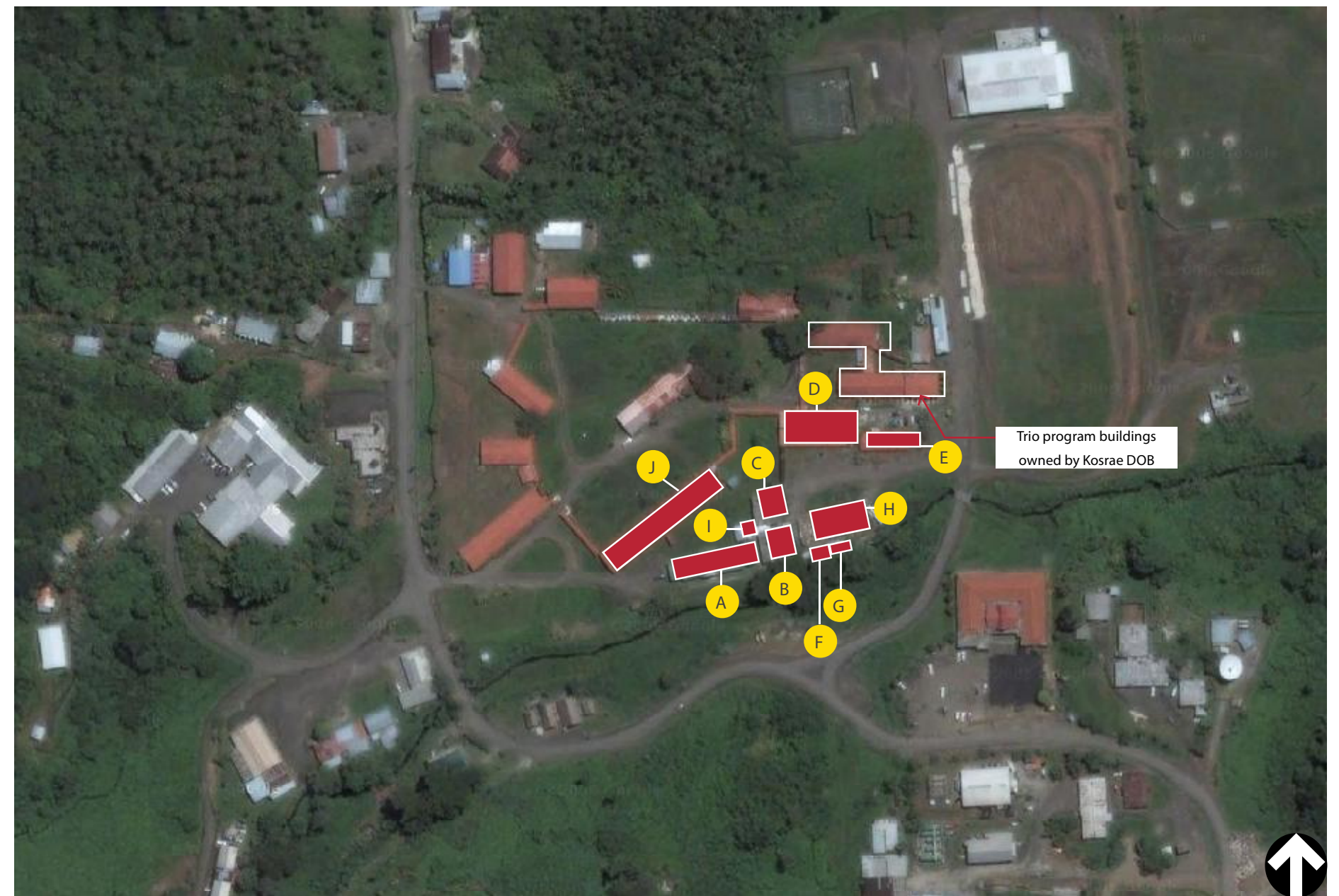


- Floor plans received
- Floor plans not available and basic site measure completed



Campus Dean: Mr. Kalwin Kephas

No.	Building Description	Remarks
A	Administration Building/ Classrooms	
B	Land Grant Building	
C	Faculty Building	
D	Rose Mackwelung Library	
E	Gear Up Program	
F	Mechanic Shop	
G	Woodshop	
H	KSBDC Building	
I	Bookstore	
J	Learning Resources and Career Development	



- Floor plans received
- Floor plans not available and basic site measure completed

FMI Program Director: Mr. Matthias Ewarmai

No.	Building Description	Remarks
A	Administration/Student Service and Residence Hall/Mess hall	
B	Staff housing	
C	Classrooms, Library and Shops	
D	Maintenance office	



- Floor plans received
- Floor plans not available and basic site measure completed

## Appendix E

# COM-FSM Personnel list



## BOARD OF REGENTS

**KASIO E. MIDA, Chair**..... FSM Government  
**LYNDON CORNELIUS, Vice Chairman** .....State of Kosrae  
**MARY B. FIGIR, Secretary – Treasurer** .....State of Yap  
**CHURCHILL EDWARD, Member**.....State of Pohnpei  
**GRACEFUL ENLET, Member** .....State of Chuuk

### ADMINISTRATION

#### OFFICE OF THE PRESIDENT

##### **DAISY, JOSEPH M.**

President and Chief Executive Officer  
B.A., Suffolk University, Boston  
M.Ed., Suffolk University, Boston  
Ed.D., Nova Southeastern University, Florida

##### **CURRIE, WALTER JAMES**

Vice President, Cooperative Research & Extension  
B.S., McGill University, Montreal, Canada  
M.P.S., Cornell University, New York

##### **DEREAS, MARIANA BEN**

Vice President, Instructional Affairs  
B.A., University of Hawaii at Hilo  
M.A., University of Hawaii at Manoa

##### **VACANT**

Vice President  
Student Services

##### **HABUCHMAI, JOSEPH**

Vice President, Administrative Services  
A.S., Community College of Micronesia  
B.S., Concordia Teachers College, Nebraska  
M.A., Concordia Teachers College, Nebraska

##### **HARRISS, FRANKIE**

Vice President  
Institutional Effectiveness and Quality Assurance  
B.S., San Diego State University  
M.S., University of South Florida  
(In Progress) Ed.D., University of Liverpool, UK

### DEPARTMENT OF ADMINISTRATIVE SERVICES

##### **HABUCHMAI, JOSEPH**

##### **Vice President**

##### **DUMANTAY, DANILO**

Comptroller  
B.S.C., Polytechnic University of the Philippines  
C.P.A., Philippines Accountancy Board  
C.G.F.M., U.S. Association of Government Accountants  
M.B.A., De La Salle University, Philippines  
A.I.F., Accredited Investment Fiduciary, USA

##### **NELSON, RENCELLY**

Director of Human Resources  
B.A., University of Hawaii at Hilo  
M.A., Southern Cross University, Australia

##### **MENDIOLA, FRANCISCO**

Director of Maintenance, Facilities and Security  
Journeyman Certificate, U.S. Department of Labor  
Journeyman Certificate, U.S. Navy Public Works  
Department

### DEPARTMENT OF INSTRUCTIONAL AFFAIRS

##### **BEN DEREAS, MARIANA**

##### **Vice President**

##### **HAINRICK, JENNIFER**

Director of Learning Resources Center  
A.A., Liberal Arts, College of Micronesia-FSM  
B.A., Elementary Education, UOG/COM-FSM  
(In Progress) MLS, University of North Texas

##### **JACK, GRILLY**

Director of Career and Technical Education  
University of Hawaii at Hilo  
USDOL Journeyman Certificate in Electrical  
US Marine Corps Journeyman Certificate in Electrical

**KANTO, KIND**

Dean of Chuuk Campus  
B.S., University of Oregon  
M.A., University of Guam

**KEPHAS, KALWIN**

Dean of Kosrae Campus  
B.A., Alliant International University, California  
M.S., Walden University, Minnesota

**ROBOMAN, LOURDES**

Dean of Yap Campus  
B.A., Creighton University, Nebraska

**SIMION, KAREN**

Dean of Academic Programs  
B.S., University of Kansas  
M.A., University of Guam

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B.A., University of Hawaii at Hilo  
M.S., Capella University

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A.S., Community College of Micronesia  
B.A., Sanoma State University

**ODUCADO, JOEY**

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A.B., Aklan College  
M.A., San Diego State University

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Coordinator, Peer Counseling  
B.S., Eastern Washington University

**DEPARTMENT OF INSTITUTIONAL EFFECTIVENESS AND QUALITY ASSURANCE****HARRISS, FRANKIE**

Vice President

**HICKS, JIMMY**

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**PERKINS, CHRISTOPHER ROSS**

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Liaison Officer  
B.A., Southeastern University  
M.A., Iliff School of Theology

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Relations  
B.S., AMA Computer College

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M.A., San Diego State University

**DEPARTMENT OF COOPERATIVE RESEARCH & EXTENSION****CURRIE, WALTER JAMES**

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**IOANIS, ENGLY**

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M.S., Ganahji University, India  
Ph.D., University of Baroda, India

**RAGUS, LOLITA**

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M.S., University of the Philippines at Los Banos  
P.h.D., University of Illinois at Urbana-Champaign

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Ph.D., Maharshi Dayanand Saraswati University, India

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**NATIONAL CAMPUS FULL TIME FACULTY**

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B.A., University of Guam  
M.A., University of Hawaii at Manoa

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M.P.H., University of Hawaii at Manoa

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(In Progress) M.A., Reading, UOG

**BIZA, SNYTHYER**

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Advanced Diploma, Bendigo Institution of Technology, Australia  
M.G.I.S., University of Queensland, Australia

**BOURGOIN, ALLAIN**

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M.S., University of Occidental Brittany  
Ph.D., University of Occidental Brittany

**BUDEN, DONALD**

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Ph.D., Louisiana State University

**CASTRO, EDPER**

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D.C.S., University of the Philippines  
M.A., University of the Philippines

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B.S., University of Santo Tomas  
M.D., Saint Louis University

**DACANAY, RUDELYN**

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B.S., Nursing, University of San Augustine, Philippines

**DEMA, MIHAI-THEODOR**

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M.S., University of Medicine, Romania  
M.D., University of Medicine, Romania

**FELIX, JOSEPH, JR.**

Chair, Business Administration  
B.A., Park College, Missouri  
M.S., National University

**GALLEN, PAUL**

Education  
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M.A., Pangasinan State University, Philippines

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M.S., Shippensburg University, Pennsylvania  
M.S., Virginia Technology

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B.S., Central Philippines University  
M.A., University of the Philippines

**HAGLELGAM, JOHN**

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B.A., University of Hawaii  
M.A., University of Hawaii  
M.P.A., Harvard University

**HALLERS, MAGDALENA**

Education  
A.A., Community College of Micronesia  
B.A., University of Guam  
M.Ed., University of Guam

**HAYES, KATHY**

Math/Science  
B.Sc., University of Liverpool  
Ph.D., University of Leeds



**IKOLI, ILONGO**

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**JONAS, ARTHUR**

Coordinator, Student Services  
B.A., University of Guam  
M.A., San Diego State University

**MIKE, NENA**

Instructional Coordinator  
B.A., University of Guam  
M.A., University of Guam

**KILLIN, KENYE K.**

CRE Coordinator  
B.S., Missouri Valley College

**VERMA, VIRENDA MOHAN**

Researcher, CRE  
B.S., University of Ajmer, India  
M.S., University of Ajmer, India  
Ph.D., Maharshi Dayanand Saraswati University, India

**KOSRAE CAMPUS FULL-TIME FACULTY**

**BUENO-DeMESA, ROSALINDA**

Languages/Literature  
B.S., Luzoninan University Foundation, Philippines  
M.A., National Teachers College, Philippines

**JONAS, ROBERT**

Languages/Literature  
A.S., Community College of Micronesia  
B.A., University of Guam  
M.Ed., University of Hawaii at Manoa

**ITTU, SKIPPER**

Languages/Literature  
B.S., University of Guam  
M.A., University of Hawaii at Manoa

**RIBAUW, MURPHY**

Technical and Trade  
N.Z.C.E., New Zealand Qualification Authority  
B.S., La Trobe University, Australia

**TARA, TARA**

Math/Science  
B.S., University of Hawaii at Hilo

**KOSRAE CAMPUS PROFESSIONAL STAFF**

Cooperative Research & Extension ..... CRE  
 Upward Bound Program..... UB  
 Business Office ..... BO

**ALBERT, JACKSON**  
 Extension Agent, CRE  
 B.A., University of Guam

**GEORGE, DOKOWE**  
 Student Services Specialist, Counseling  
 3rd year Certificate, Community College of Micronesia  
 A.S., Navarro College

**ISAAC, RENTON**  
 Systems Specialist, IT  
 A.S., College of Micronesia-FSM

**LIVAIE, MERYULYN**  
 College Nurse  
 Certificate, Fiji School of Medicine  
 A.S., College of The Marshall Islands

**NENA, EILEEN S.**  
 Student Services Specialist, FAO  
 A.A., College of Micronesia

**PHILLIP, ALIK**  
 Fiscal Officer, BO  
 A.S., College of Micronesia-FSM

**SIGRAH, PALIKNOA**  
 Youth Agent, CRE  
 A.S., Community College of Micronesia

**KOSRAE CAMPUS SUPPORT STAFF**

**ALIK, LANSON**  
 Security Officer

**ALOKA, HENRY**  
 Security Officer

**BUENO, TEODORO**  
 Maintenance Supervisor, Maintenance & Security

**CHARLEY, SRUE**  
 Custodian, Maintenance

**CORNELIUS, ELSAH**  
 Account Clerk, Bookstore

**CORNELIUS, SALIK**  
 Research Assistant, CRE

**JACKSON, SHIRLEY**  
 Extension Assistant, CRE

**JOE, TOLENNA**  
 Security Officer

**JOHNNYBOY, JOHN S.**  
 Maintenance Worker

**KUN, BEAKER**  
 Security Officer

**NODA, HIROKI**  
 Technician, IT

**SAHM, SHRUE MIAKO**  
 Secretary III, Campus Dean's Office

**TIMOTHY, JULIE**  
 Extension Assistant, CRE

**TOLENNA, TOLENNA**  
 Maintenance Worker

**WILLIAM, MICHAEL**  
 Library Technician, LRC

**KOSRAE CAMPUS OTHER EXTERNALLY FUNDED PROGRAMS**

**MAVER, JONATHAN**  
 Student Services Specialist, Peer Counseling  
 A.A., College of Micronesia-FSM

**REYNOLD, ROSLIN**  
 Administrative Specialist III, AHEC  
 B.A., University of Guam

## YAP CAMPUS ADMINISTRATION

### ROBOMAN, LOURDES Campus Dean

#### DIBAY, CECILIA

Student Services Coordinator  
A.S., Community College of Micronesia

#### EWARMAI, MATTHIAS J.

FSM-FMI Director  
B.S., Philippine Merchant Marine Academy  
M.S., World Maritime University, Sweden

#### FILEPIN, TERESA

Project Director, Upward Bound  
B.A., University of Hawaii at Hilo

#### KRISHNAPILLAI, MURUKESAN

Researcher, CRE  
B.S., University of Kerala, India  
M.S., Mahatma Gandhi University, India  
Ph.D., M.S. University of Baroda, India  
B.S. University of Hyderabad, India  
P.G. Diploma, Professional Career Dev Institute, USA

#### YOUNG-UHK, STEVEN

CRE Coordinator  
B.A., University of the South Pacific

## YAP CAMPUS FULL-TIME FACULTY

#### FIGIRLIYONG, JOSEDE

Social Science  
B.A., California State University  
M.A., California State University

#### GUARIN, JOY

Math/Science  
B.S., Virgen Milagrosa University, Philippines  
M.S., Virgen Milagrosa University, Philippines  
Ph.D., Grogorio, Arenata University, Philippines

#### MASIWEMAI, JOVITA

Languages/Literature  
B.A., University of Guam  
M.Ed., University of Hawaii at Manoa

#### PERMITEZ, RAYMOND

Technical and Trade  
B.S.I.E., Marikina Polytechnic College  
M.A., Marikina Polytechnic College

#### TACHELIOL, ROSA

Languages/Literature  
B.A., University of Guam  
M.A., University of Hawaii at Manoa

#### VELASQUEZ, RHODA

Math/Science  
B.A., Pangasinan State University  
M.A., Pangasinan State University  
(In Progress) P.h.D., University of Hawaii at Manoa

## YAP CAMPUS PROFESSIONAL STAFF

Cooperative Research & Extension ..... CRE  
Upward Bound Program ..... UB

#### GUARIN, SUSAN

Librarian, LRC  
B.S., Philippines Normal University

#### MANGARWEN, GERTRUDE

Student Services Specialist, Counseling  
A.S., Community College of Micronesia

#### MANNA, ROSEMARY

Accountant, BO  
A.S., College of Micronesia-FSM

#### MIREY, PIUS

Information System Specialist, IT  
A.S., Community College of Micronesia  
B.S., Australian Catholic University

#### RUWNIYOL, MARTIN

Extension Agent, CRE

#### WAATHAN, JULIANA

Campus Nurse  
A.S., Chemeketa Community College  
B.S., Western Oregon University



**YAP CAMPUS SUPPORT STAFF**

**CHUWMAI, GEORGE**  
Research Assistant, CRE

**MOOTINAG, MARY**  
Custodian, Maintenance

**FAIMAU, MOSES**  
Maintenance Supervisor

**RUTNAG, EMMY**  
Clerk Typist, CRE

**GANANG, JAMES**  
Security Officer

**TININGMOW, MERCEDES**  
Account Clerk, Bookstore

**GILMAR, FIDELIA**  
Administrative Assistant, Campus Dean's Office

**YOROR, EZRA**  
Technician, IT

**MANA, ROSEMARY**  
Accountant, BO

**YORUW, AIDEN**  
Maintenance Worker

**YAP CAMPUS OTHER EXTERNALLY FUNDED PROGRAMS**

**FILEPIN, TERESA**  
Project Director, UB  
B.A., University of Hawaii at Hilo

**MITAGYOW, GERALDINE**  
Student Services Specialist, UB  
B.S., University of Oregon

**ILESUIYALO, SERPHIN**  
Student Services Specialist, UB  
B.A., Asia University, Tokyo Japan

**ROGON, MONICA**  
Administrative Assistant, UB  
A.A., College of Micronesia-FSM  
3rd year Certificate, College of Micronesia-FSM

**LUBUEG, CONSTANCE**  
Teaching Assistant, UB  
A.S., College of Micronesia-FSM  
3rd Year Certificate, College of Micronesia-FSM  
University of Guam

**FSM-FMI CAMPUS FULL-TIME FACULTY**

**FALMED, JOSEPH D.**  
Mechanical Engineer  
A.S., Central Texas College

**RAIUKLUR, ALEX M.**  
Marine Engineer  
Class 3 Marine Engineer  
A.S., Oklahoma State Technology

**MAILUW, MICHAEL**  
Marine Engineer Instructor  
Class 4 Master

**SINEM, ALVIN**  
Fishing Instructor  
Class 5 Master  
College of Micronesia-FSM  
FSM-FMI College of Micronesia-FSM

**NAILATI, PENIJAMINI**  
Navigation Instructor  
Class 3 Master  
Diploma, Fiji Institute of Technology

**FSM-FMI PROFESSIONAL STAFF**

**DUGWEN, CLOTILDA**  
Accountant, BO  
Navarro College

**SOHLITH, JAKE**  
System Specialist I, IT  
A.S., College of Micronesia-FSM

**SANEMAI, AUGUSTINO**  
Recruitment/Placement Officer  
Park College

---

**FSM-FMI SUPPORT STAFF****FAIMAU, REGINA**

Secretary, Administration

**TALIMELIB, VINCENT**

COOK III, Dining Hall

**IGEM, CHRISTOPHER**

Maintenance Supervisor, Maintenance &amp; Security

**YASOLUG, RUFUS**

Student Services Assistant, RH

**PAGAL, ALICE**

Library Assistant IV, LRC

**YORUW, AIDEN**

Maintenance Worker

**RUWEKUGBUNG, BORTEN**

Cook II, Dining Hall

## Appendix B

### Educational Assessment Component - Classroom capacities

Click here and  
then click  
'insert picture'

## Classroom Capacities Used

Campus, Building - Room	Room Capacity to Use for Calculations	Source - Room Capacity to Use for Calculations
Chuuk, Building B - Rm 101	30	maintenance data supplied by COM-FSM
Chuuk, Building B - Rm 102	30	maintenance data supplied by COM-FSM
Chuuk, Building B - Rm 103	30	maintenance data supplied by COM-FSM
Chuuk, Building B - Rm 104	30	maintenance data supplied by COM-FSM
Chuuk, Building C - Rm 101	25	maintenance data supplied by COM-FSM
Chuuk, Building C - Rm 102	25	maintenance data supplied by COM-FSM
Chuuk, Building C - Rm 103	25	maintenance data supplied by COM-FSM
Chuuk, Building C - Rm 104	25	maintenance data supplied by COM-FSM
Chuuk, Building D - Vocational Room 1	16.5	overall class schedule avg
Chuuk, Computer Lab Building - Computer Lab 1	30	maintenance data supplied by COM-FSM
Chuuk, Mid Town - CMT Room 101	19.1	overall class schedule avg
FMI, Cafeteria - Mess Hall	85	maintenance data supplied by COM-FSM
FMI, Training Building - Engineering Classroom	22	maintenance data supplied by COM-FSM
FMI, Training Building - Engineering Lab	20.0	overall class schedule avg
FMI, Training Building - Fishing Lab	20	20 (from COM-FSM email)
FMI, Training Building - FMI Computer Lab	20	20 (from COM-FSM email)
FMI, Training Building - Navigation Classroom	29.7	overall class schedule avg
FMI, Training Building - Navigation Lab	27.5	overall class schedule avg

FMI, Training Building - Seaman's Shelter	50	50 (from COM-FSM email)
Kosrae, Administration Building - Computer Lab	30	maintenance data supplied by COM-FSM
Kosrae, Administration Building - Room 105	30	maintenance data supplied by COM-FSM
Kosrae, Administration Building - Science Lab	24	maintenance data supplied by COM-FSM
Kosrae, Carpentry Shop - Carpentry Shop	16.3	overall class schedule avg
Kosrae, ET & C Building - Electronic and Telecommunication Room	15	maintenance data supplied by COM-FSM
Kosrae, Gym - Gym	20.8	overall class schedule avg
Kosrae, Rose Mackwelung Library - Conference Room	20.7	overall class schedule avg
Kosrae, Small Business Dev't Center - Learning Resource 1	24	maintenance data supplied by COM-FSM
Kosrae, Small Business Dev't Center - Learning Resource 2	24	maintenance data supplied by COM-FSM
National, A plus Center - Fine Arts Room	25	maintenance data supplied by COM-FSM
National, Agriculture - Agriculture	21.4	overall class schedule avg
National, Classroom A - Room A101	20	maintenance data supplied by COM-FSM
National, Classroom A - Room A102	20	maintenance data supplied by COM-FSM
National, Classroom A - Room A103	16	maintenance data supplied by COM-FSM
National, Classroom A - Room A202	30	maintenance data supplied by COM-FSM
National, Classroom A - Room A203	30	maintenance data supplied by COM-FSM
National, Classroom A - Room A204	30	maintenance data supplied by COM-FSM
National, Classroom B - Room B101	26	maintenance data supplied by COM-FSM

National, Classroom B - Room B102	30	maintenance data supplied by COM-FSM
National, Classroom B - Room B103	26	maintenance data supplied by COM-FSM
National, Classroom B - Room B104	26	maintenance data supplied by COM-FSM
National, Classroom B - Room B105	26	maintenance data supplied by COM-FSM
National, Classroom B - Room B201	26	maintenance data supplied by COM-FSM
National, Classroom B - Room B202	26	maintenance data supplied by COM-FSM
National, Classroom B - Room B204	26	maintenance data supplied by COM-FSM
National, Classroom B - Room B205	26	maintenance data supplied by COM-FSM
National, Classroom B - Room B206	26	maintenance data supplied by COM-FSM
National, Faculty A - Ed Computer Lab	15	maintenance data supplied by COM-FSM
National, Gymnasium - Main Gym	24.3	overall class schedule avg
National, Gymnasium - Weight Room	21.0	overall class schedule avg
National, Nursing Room - Nursing Room 1	19.2	overall class schedule avg
National, Nursing Room - Nursing Room 2	22.5	overall class schedule avg
National, Other - TBA	30.2	overall class schedule avg
Pohnpei, Administration Bldg - Room 11	24.6	overall class schedule avg
Pohnpei, Administration Bldg - Room 12	23.9	overall class schedule avg
Pohnpei, Blue Plate Cafe - BPC Room	22.2	overall class schedule avg
Pohnpei, Building A - Business Computer Lab	25	maintenance data supplied by COM-FSM
Pohnpei, Building A - Room 1	25	maintenance data supplied by COM-FSM
Pohnpei, Building A - Room 2	25	maintenance data supplied by COM-FSM



Pohnpei, Building A - Room 3	25	maintenance data supplied by COM-FSM
Pohnpei, Building A - Room 4	25	maintenance data supplied by COM-FSM
Pohnpei, Building B - Room 5	25	maintenance data supplied by COM-FSM
Pohnpei, Building B - Room 6	25	maintenance data supplied by COM-FSM
Pohnpei, Building B - Room 7	25	maintenance data supplied by COM-FSM
Pohnpei, Gymnasium - Gym	28.2	overall class schedule avg
Pohnpei, Instructional Bldg - Room 8	22.9	overall class schedule avg
Pohnpei, Instructional Bldg - Room 9	16.8	overall class schedule avg
Pohnpei, Other - TBA	8.5	overall class schedule avg
Pohnpei, PSBDC Building - Classroom 1	30	maintenance data supplied by COM-FSM
Pohnpei, PSBDC Building - Classroom 2	30	maintenance data supplied by COM-FSM
Pohnpei, Vocational Education Bldg - Electrical	15	maintenance data supplied by COM-FSM
Pohnpei, Vocational Education Bldg - Vocational Room 7	13	maintenance data supplied by COM-FSM
Pohnpei, Vocational Education Bldg - Vocational Room 8	20	maintenance data supplied by COM-FSM
Pohnpei, Vocational Education Bldg - Vocational Room/Shop 6	11	maintenance data supplied by COM-FSM
Yap, Administration Building - Administration 1	24.6	overall class schedule avg
Yap, Computer Lab - Computer Lab 1	30	maintenance data supplied by COM-FSM
Yap, Science Lab Building - Science Lab	30	maintenance data supplied by COM-FSM
Yap, Vocational Education Bldg - VocEd 1	15	maintenance data supplied by COM-FSM
Yap, Vocational Education Bldg - VocEd 3	15	maintenance data supplied by COM-FSM

Yap, Vocational Education Bldg - VocEd Laboratory	15	maintenance data supplied by COM-FSM
Yap, Yap Memorial Hospital - Yap Memorial Hospital	20.7	overall class schedule avg
Yap, Yap State Court - Yap State Court	20.9	overall class schedule avg

## Appendix C

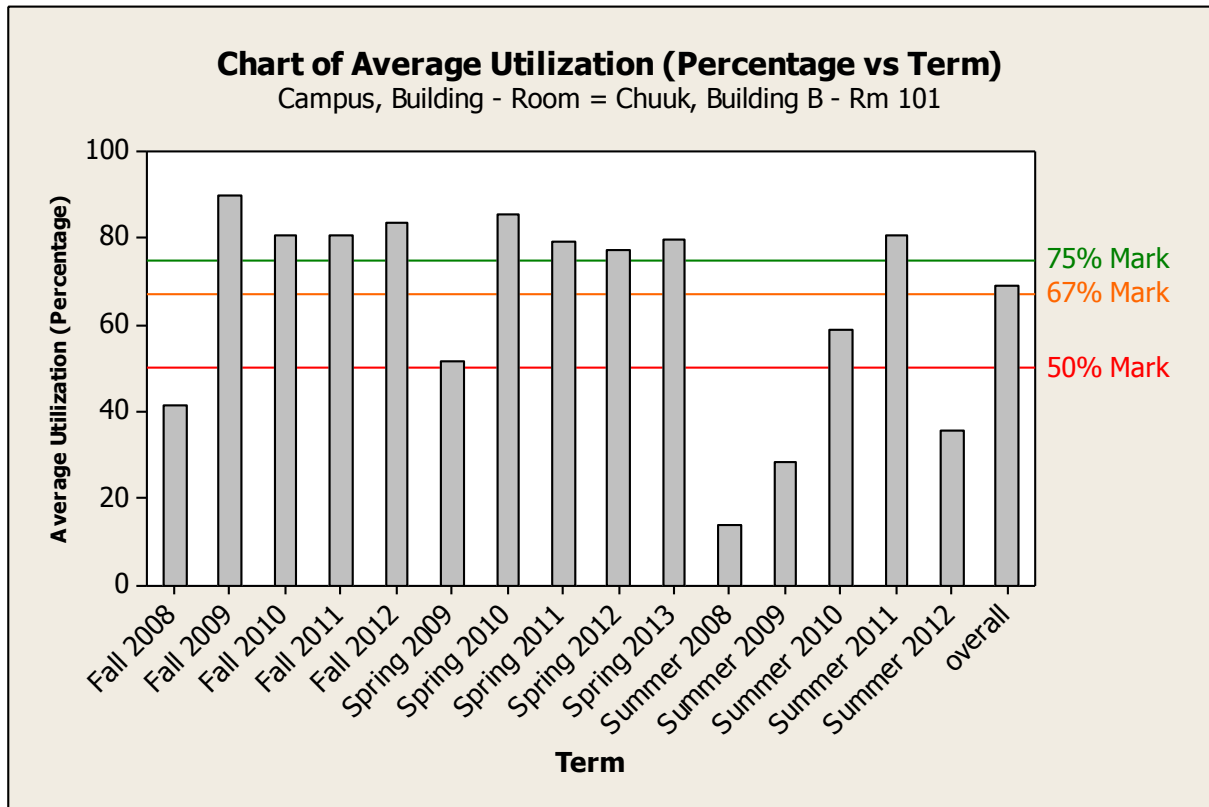
### Education Assessment Component - Classroom Utilization Charts

Click here and  
then click  
'insert picture'

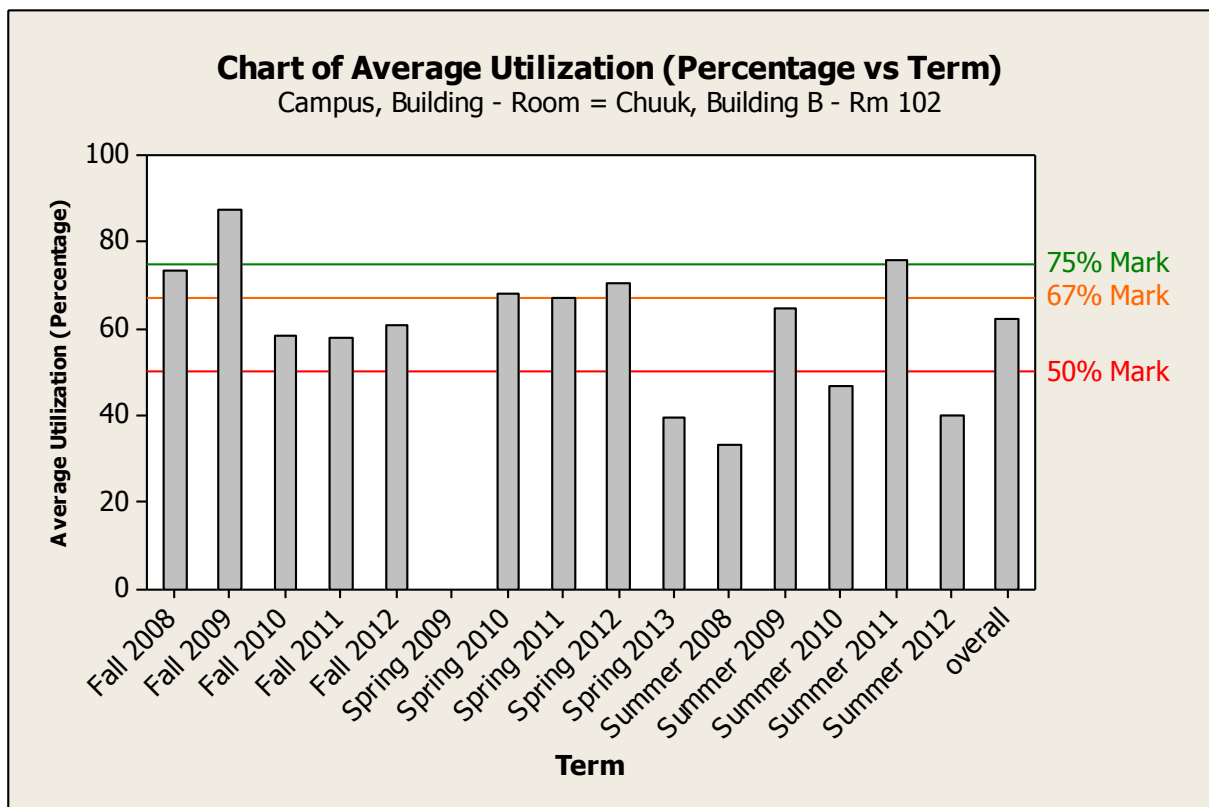
### **Chuuk - 11 Rooms**

NOTE: Some rooms had average capacities above 100%, but these have only been shown to be 100% of the graphs.

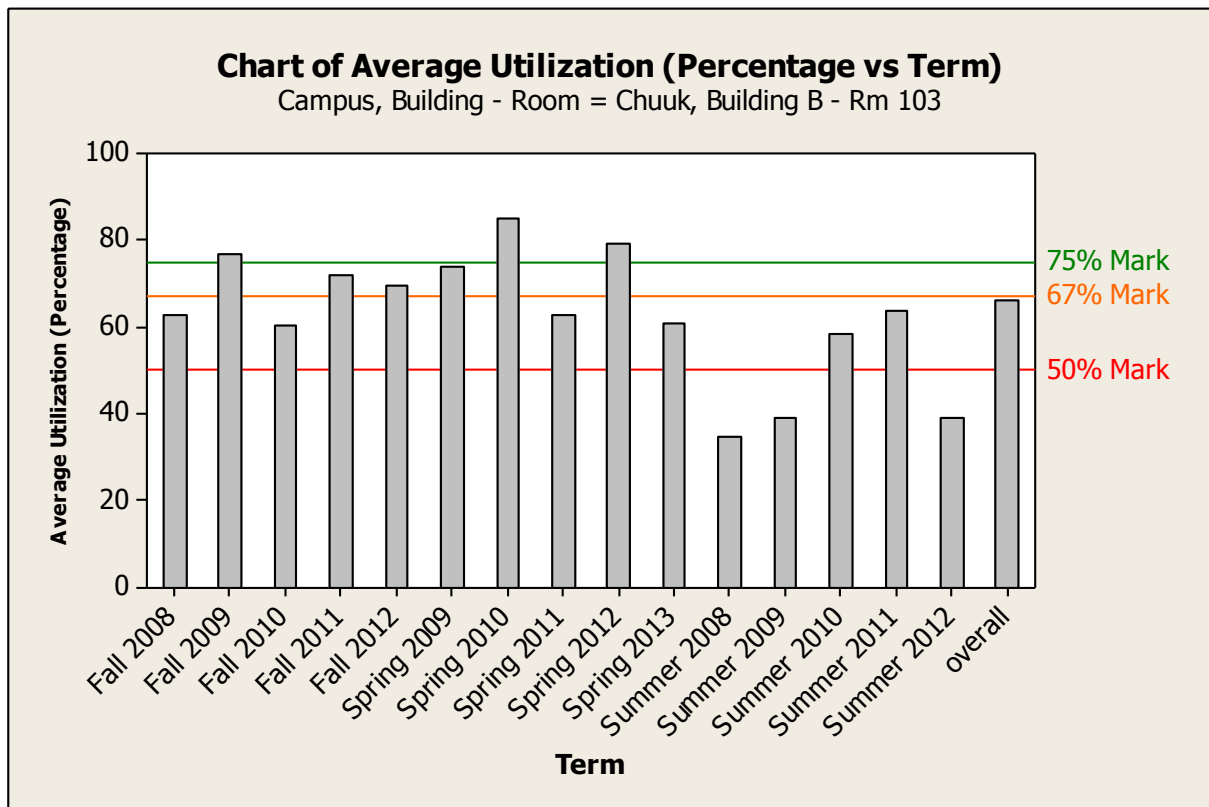
### Building B – Rm 101



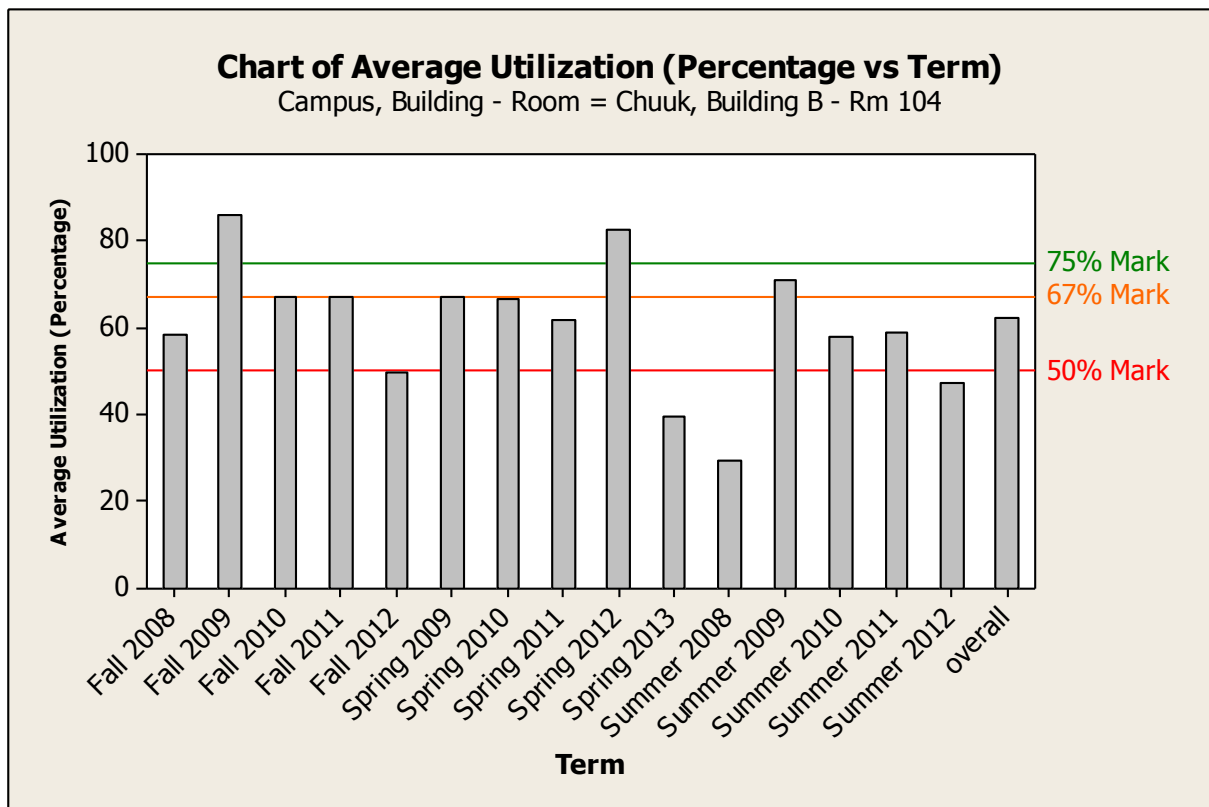
### Building B – Rm 102



Building B – Rm 103

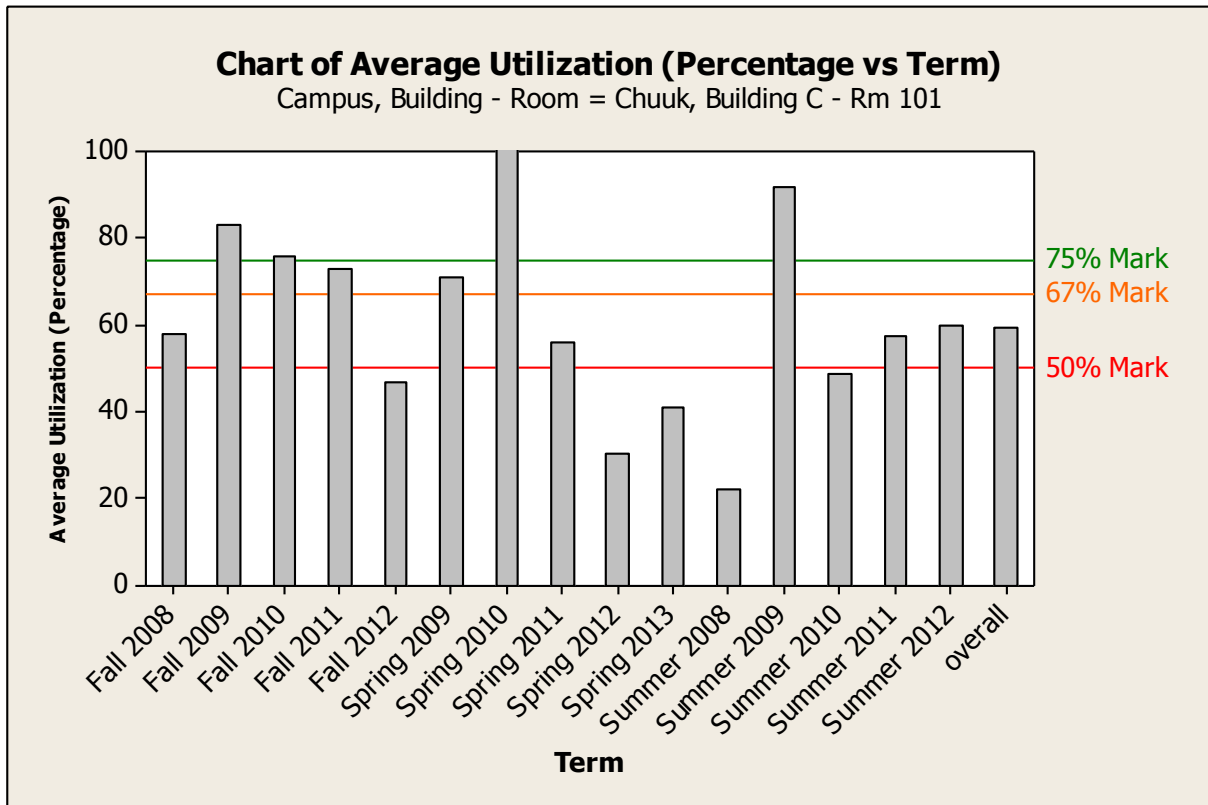


Building B – Rm 104

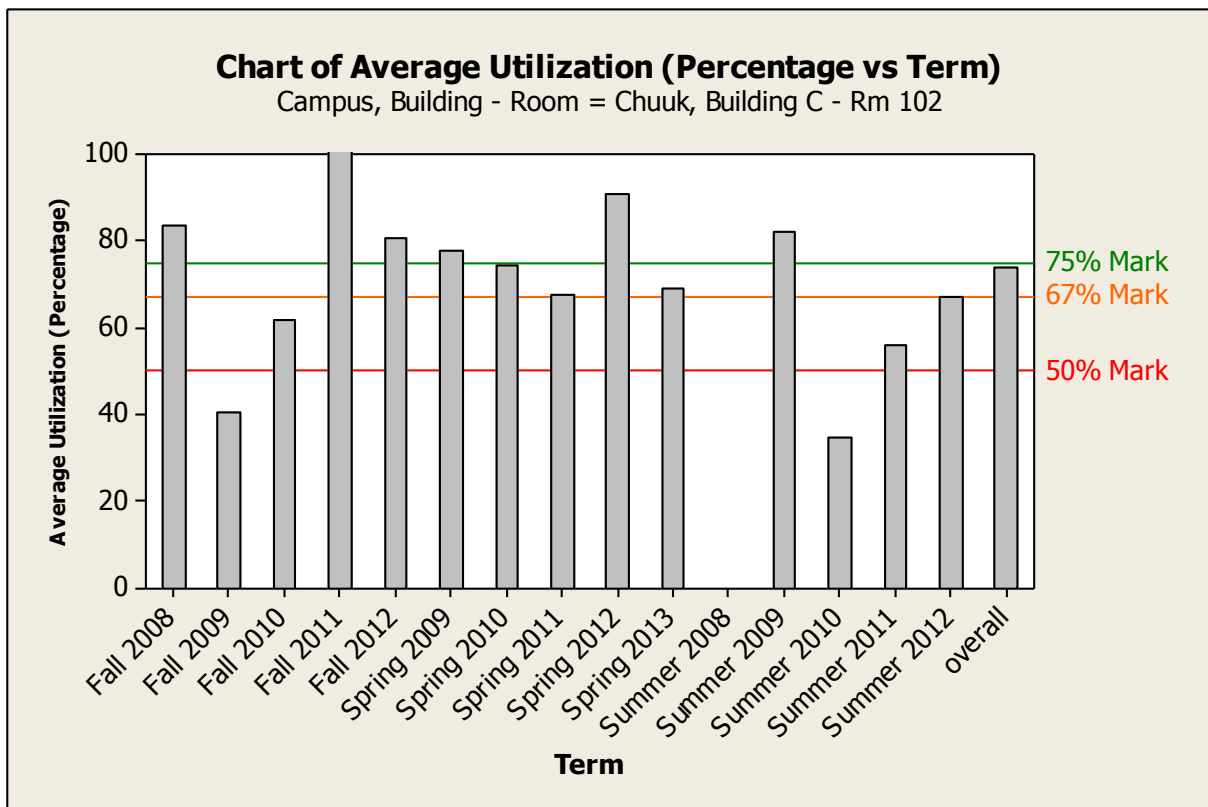




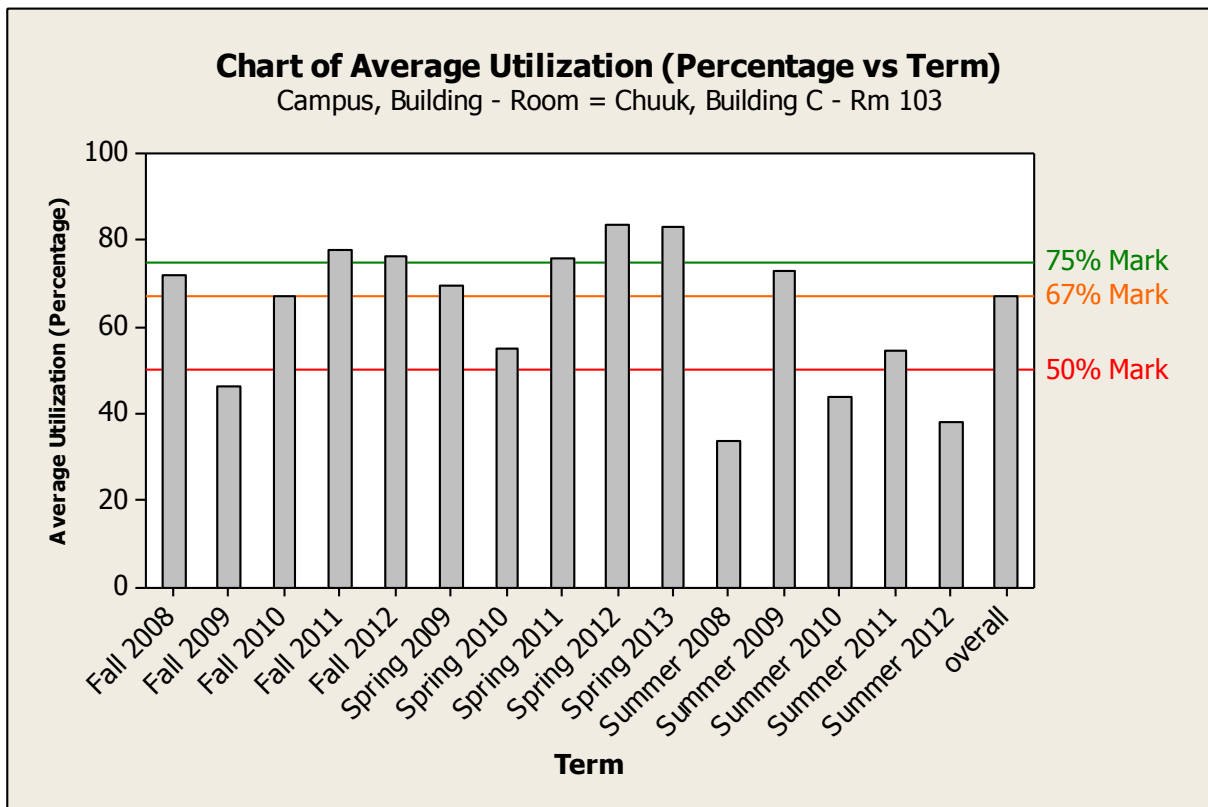
### Building C – Rm 101



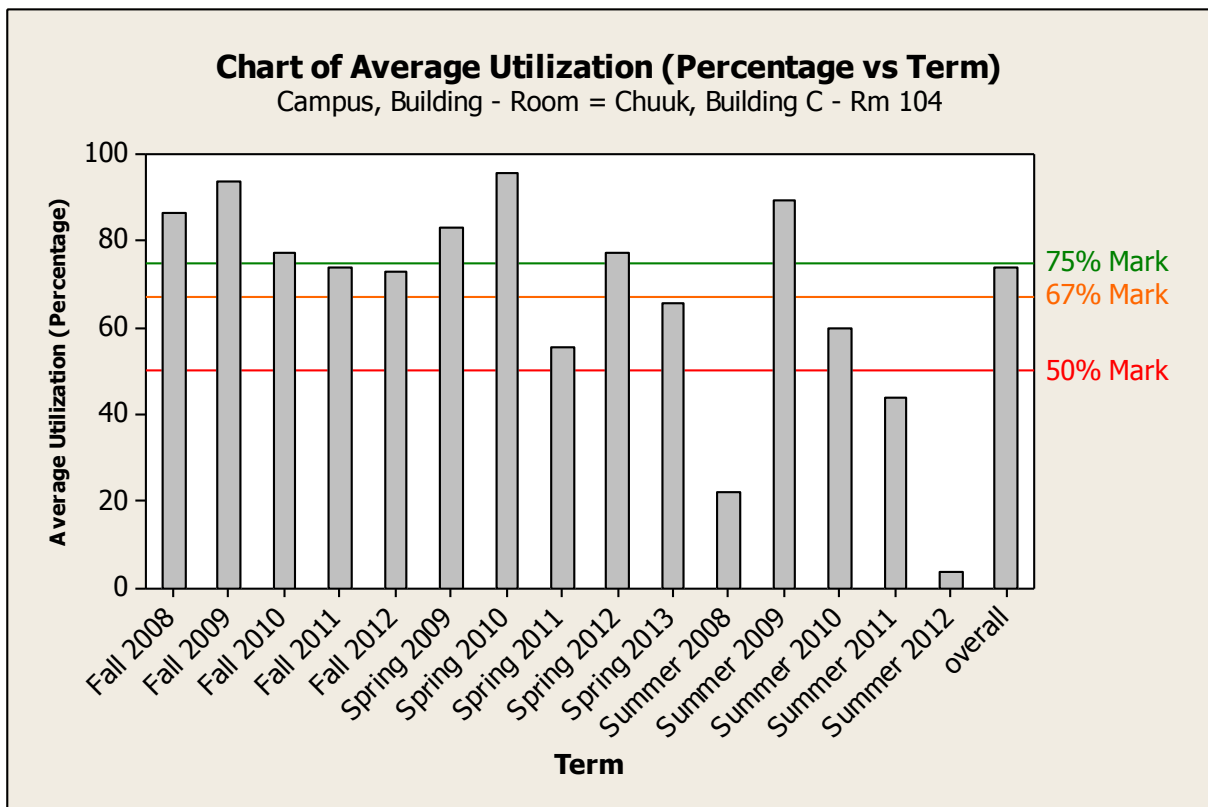
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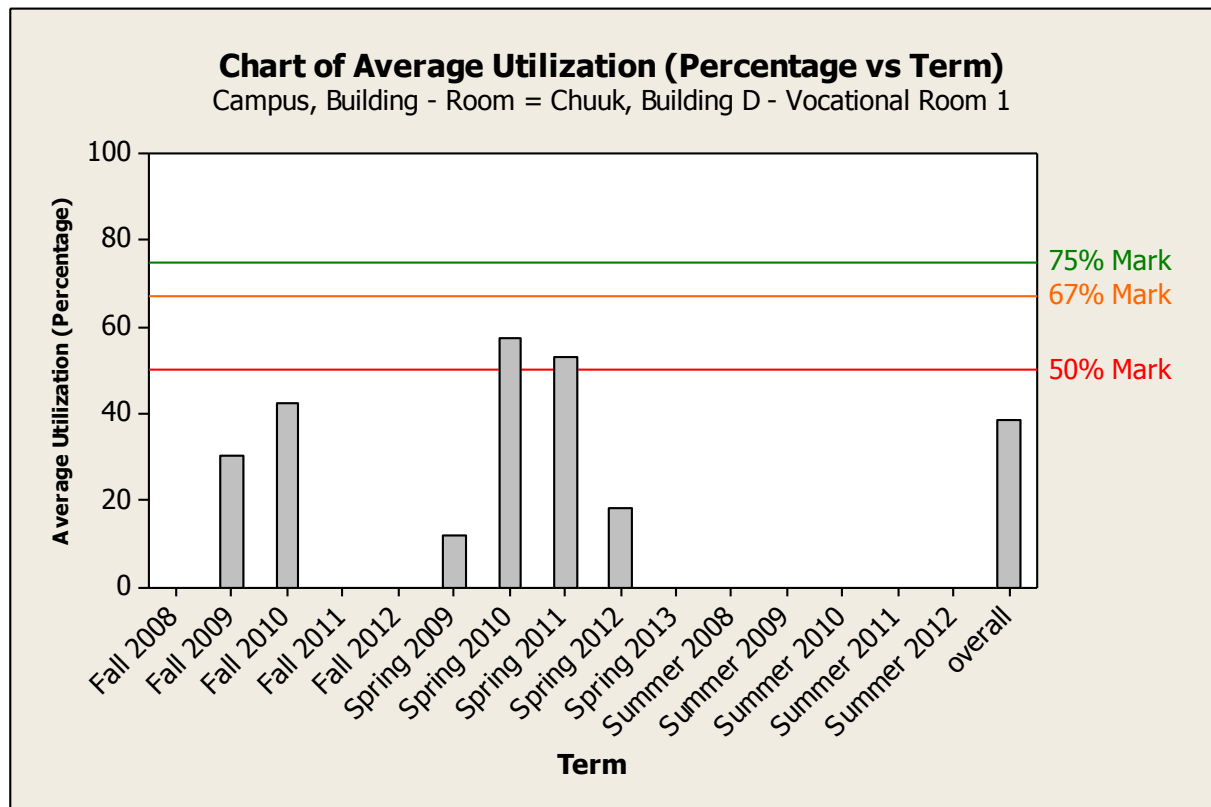
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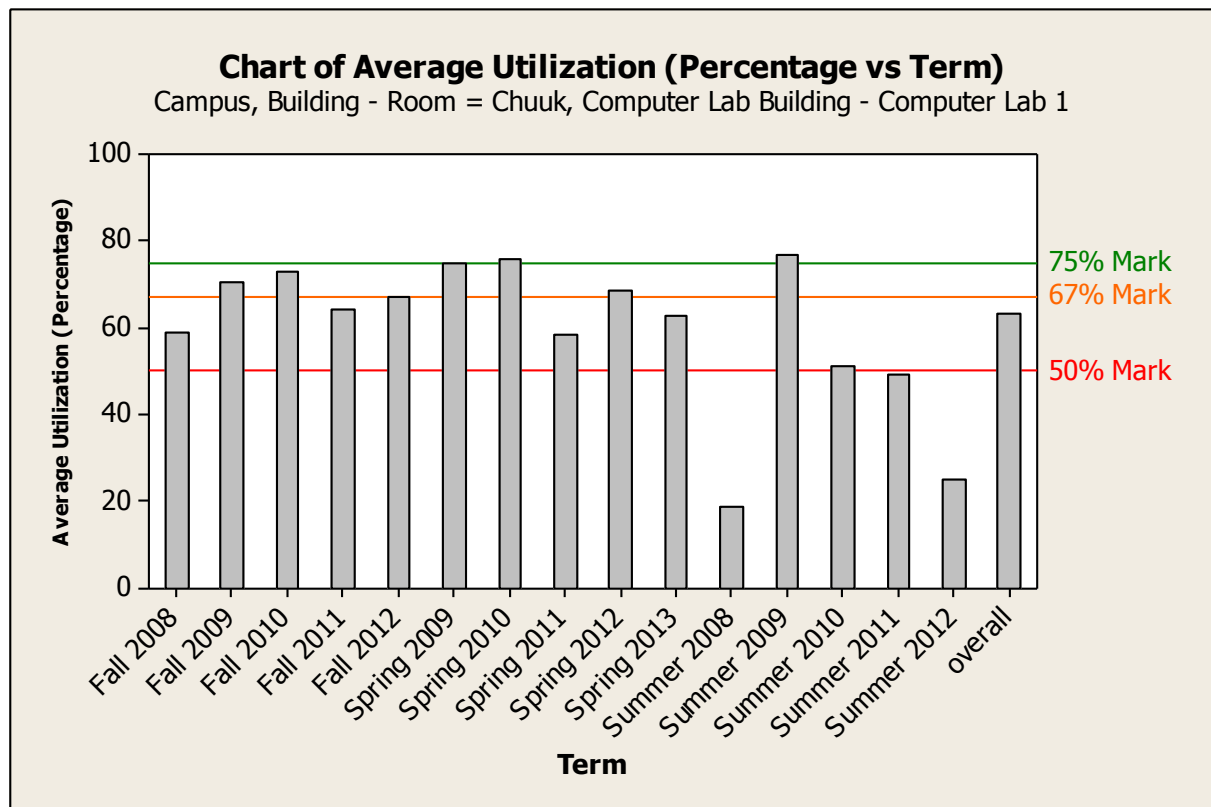
### Building C – Rm 104



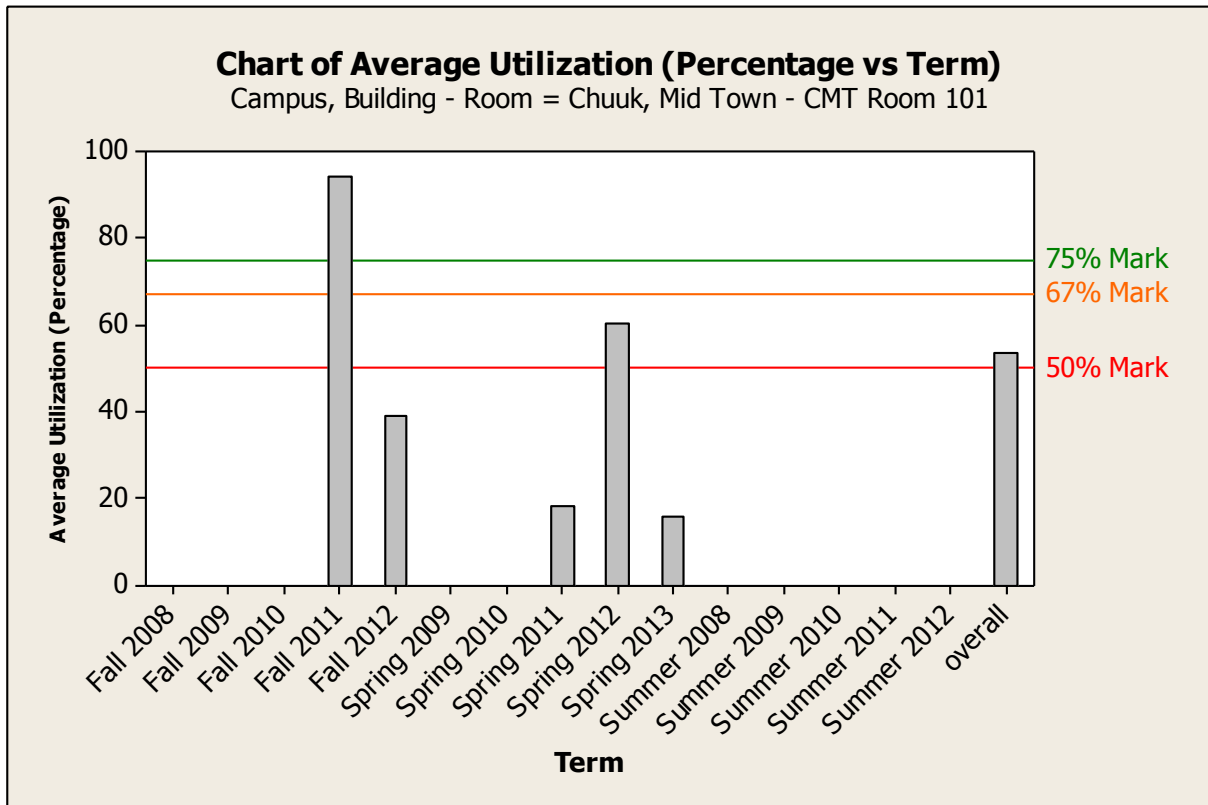
## Building D – Vocational Room 1



## Computer Lab Building – Computer Lab 1



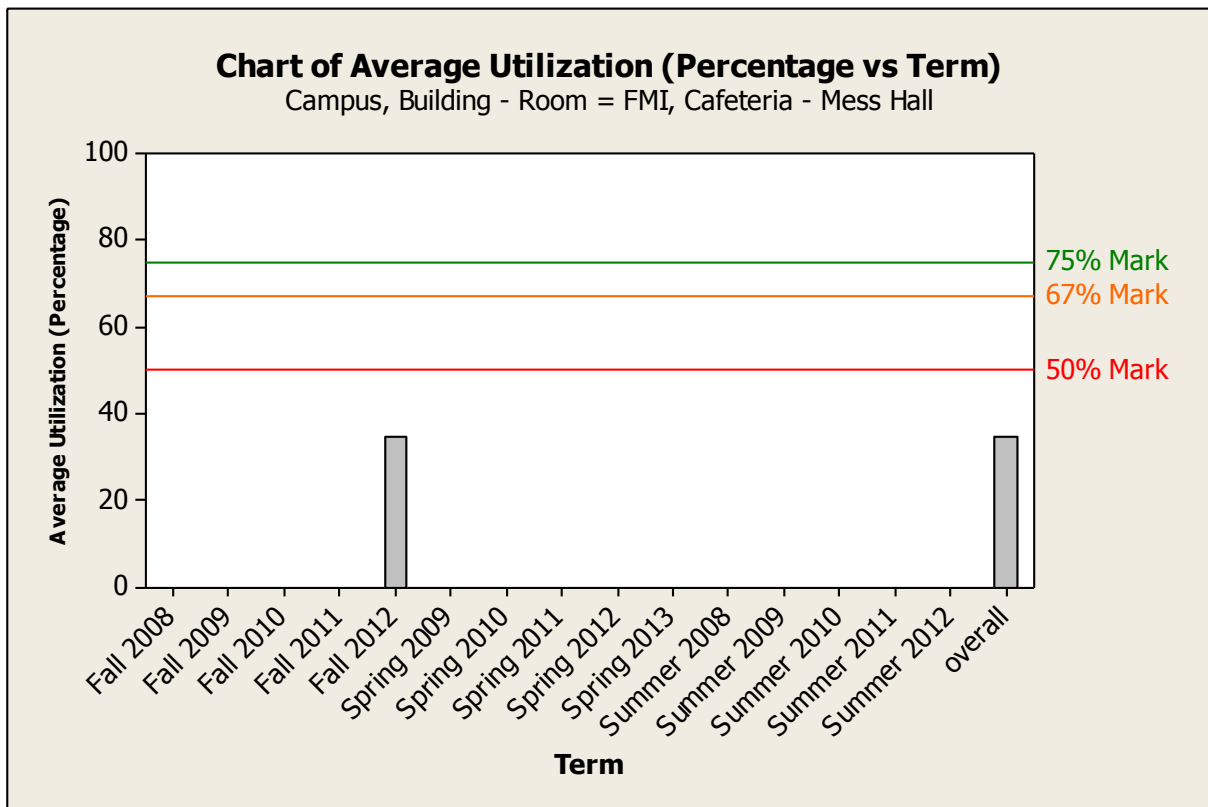
Mid Town – CMT Room 101



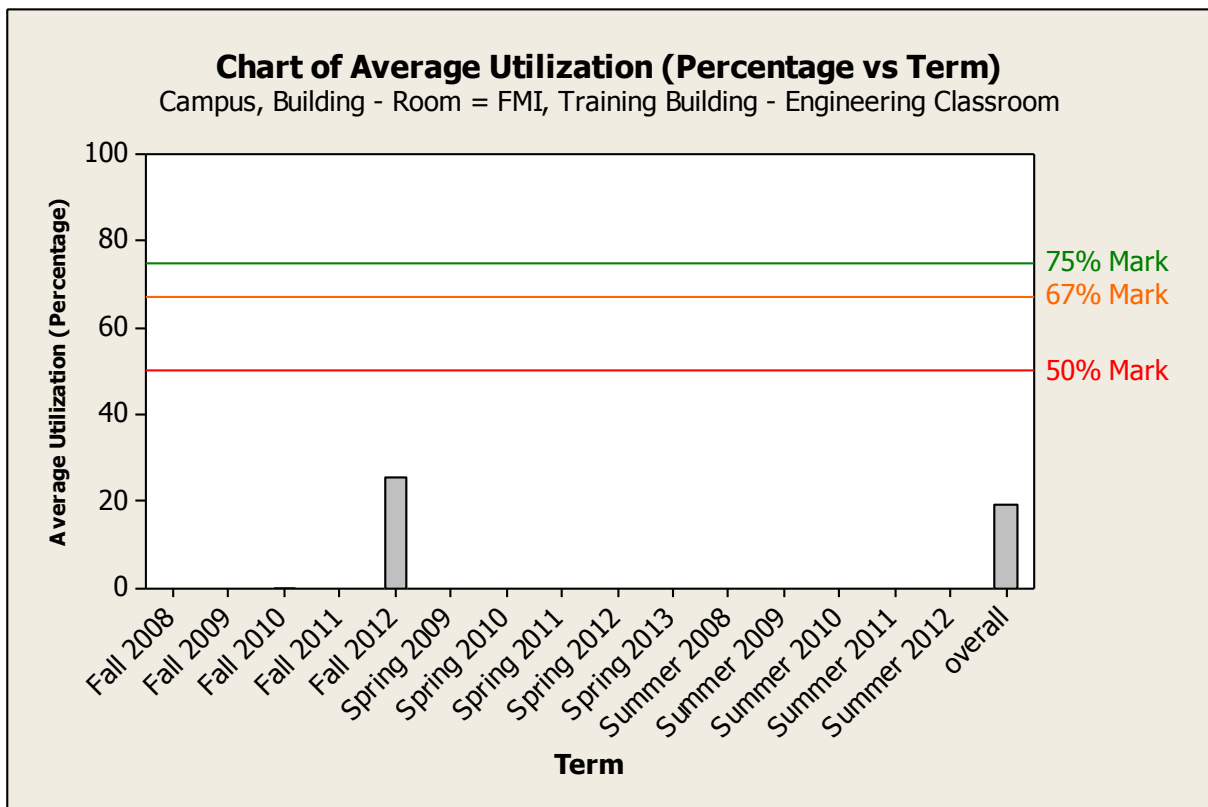
### **FMI – 8 Rooms**

NOTE: Some rooms had average capacities above 100%, but these have only been shown to be 100% of the graphs.

## Mess Hall



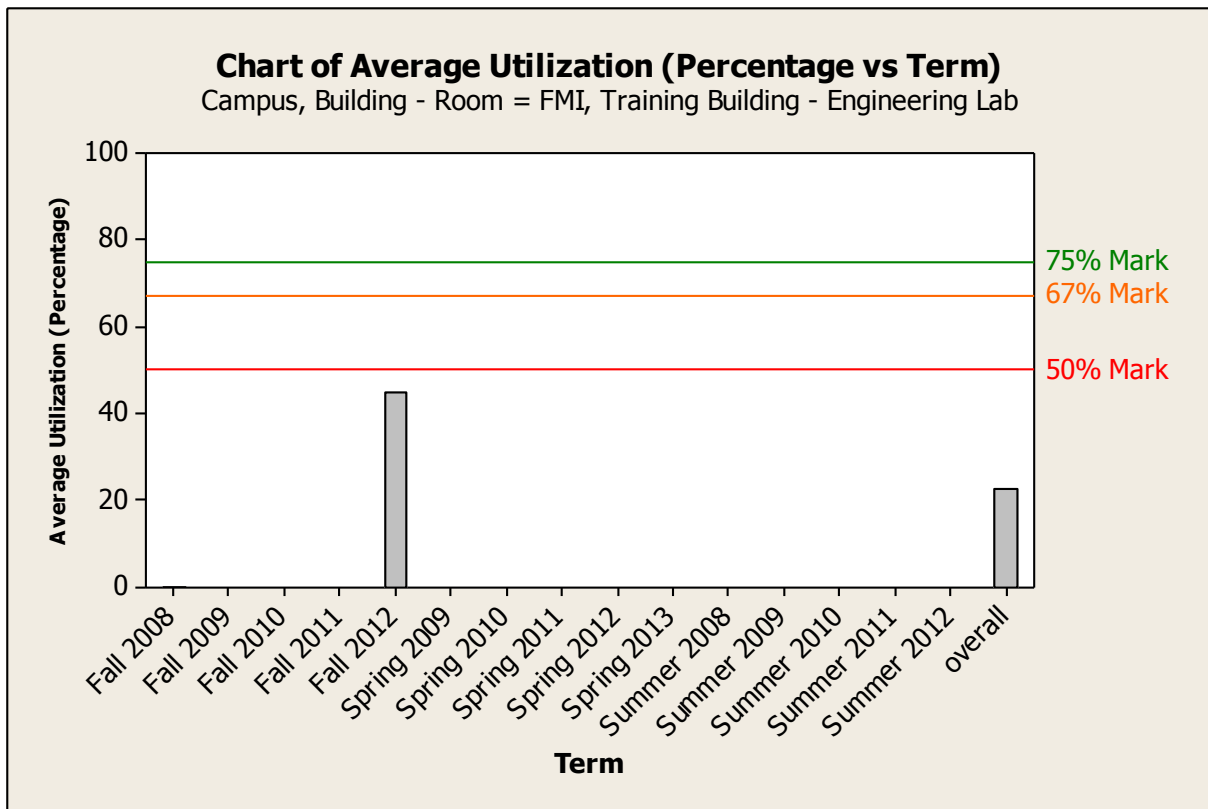
## Engineering Classroom





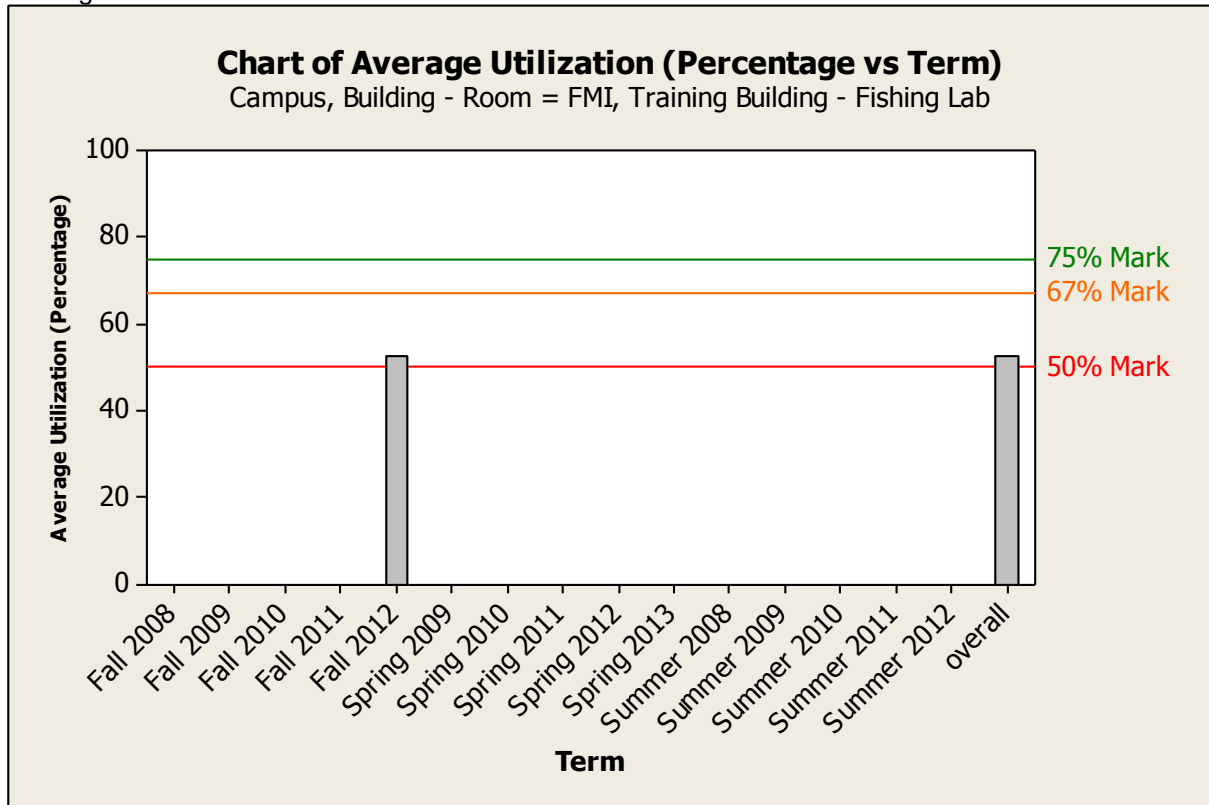
NOTE: Fall 2010 had an average capacity of 0% and this lowered the overall average percentage.

#### Engineering Lab

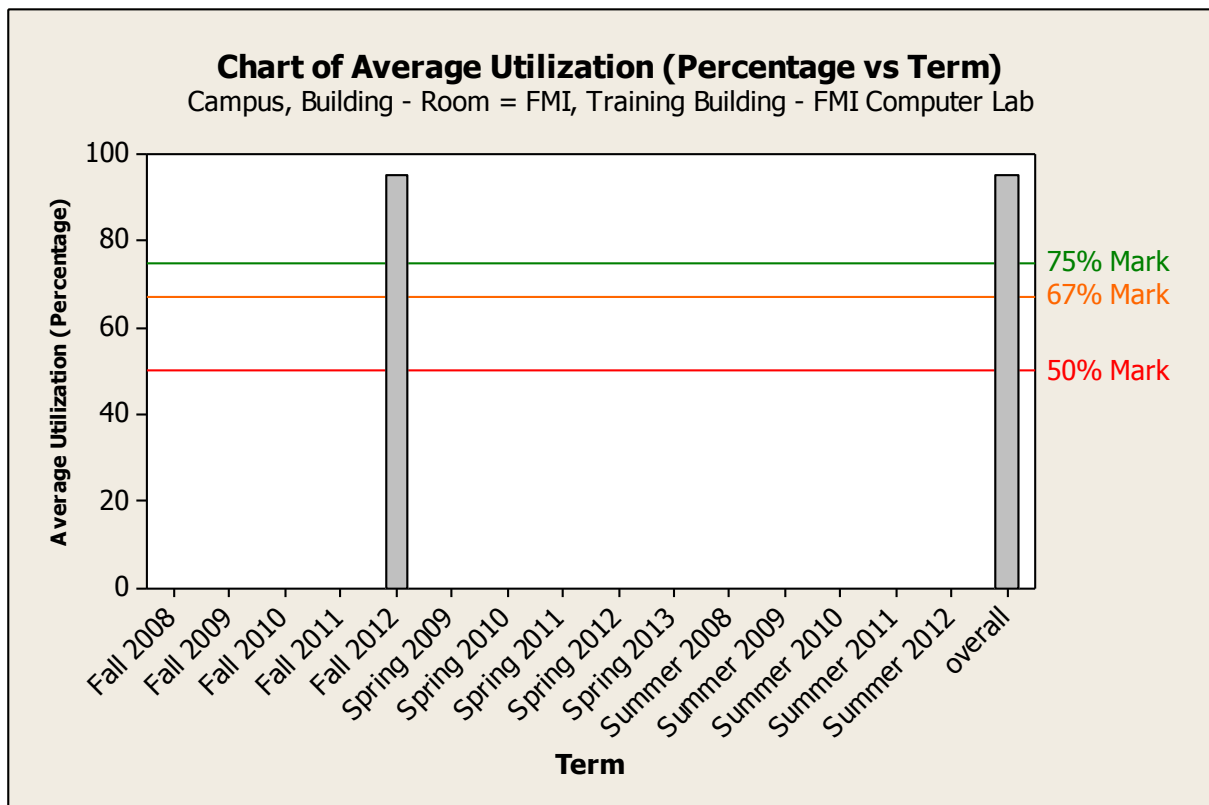


NOTE: Fall 2008 had an average capacity of 0% and this lowered the overall average percentage.

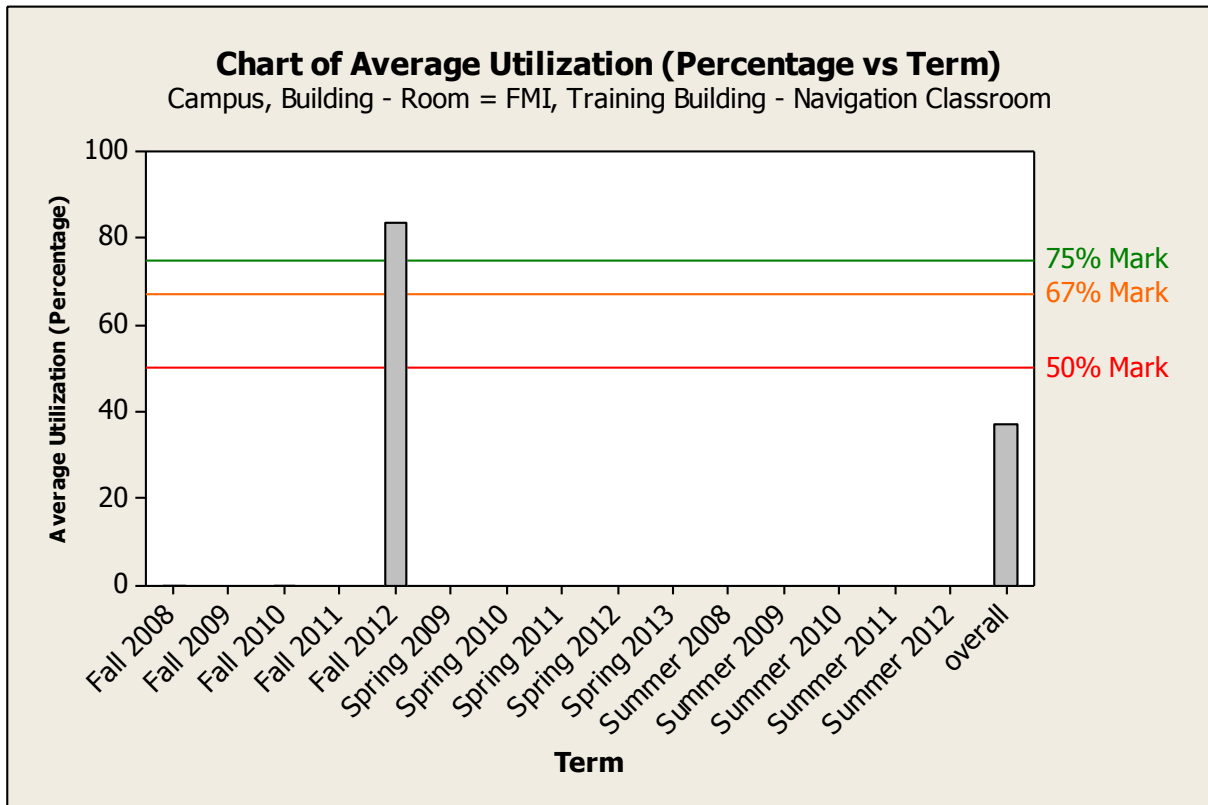
### Fishing Lab



### FMI Computer Lab

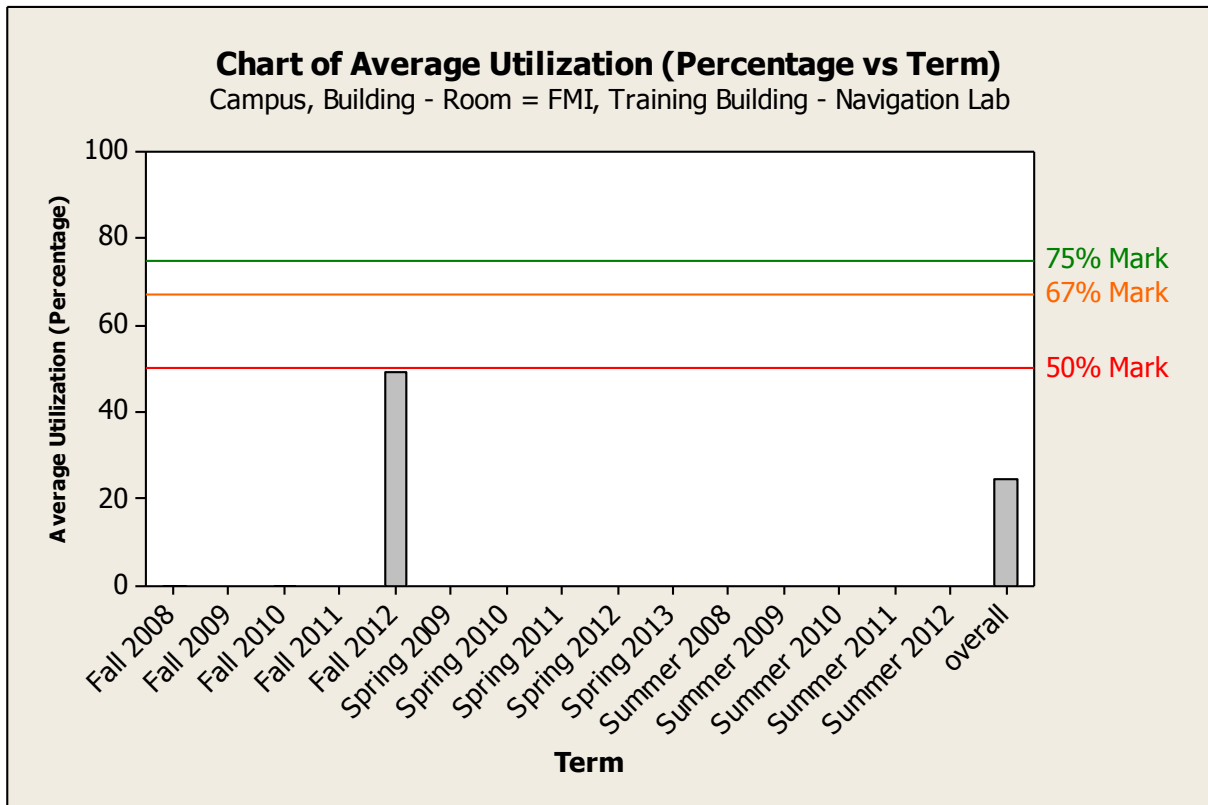


## Navigation Classroom



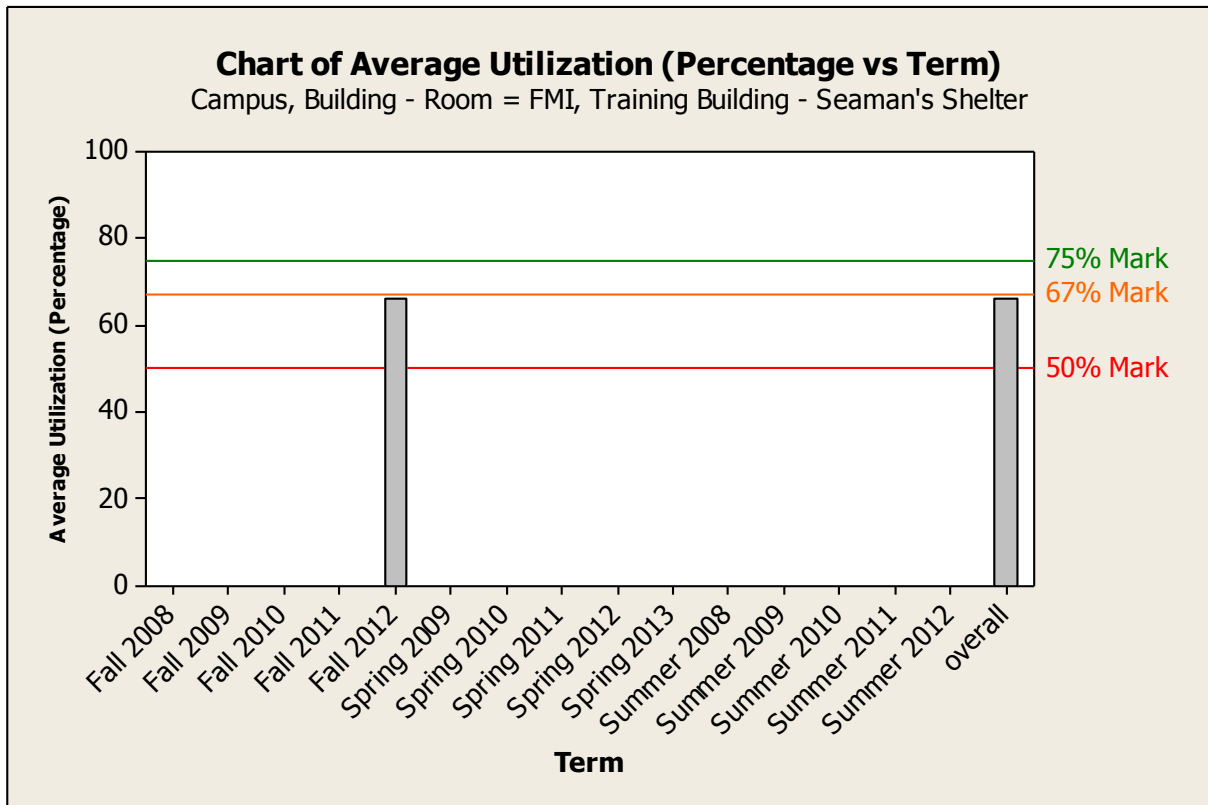
NOTE: Fall 2008 and Fall 2010 had average capacities of 0% and this lowered the overall average percentage.

## Navigation Lab



NOTE: Fall 2008 and Fall 2010 had average capacities of 0% and this lowered the overall average percentage.

Seaman's Shelter

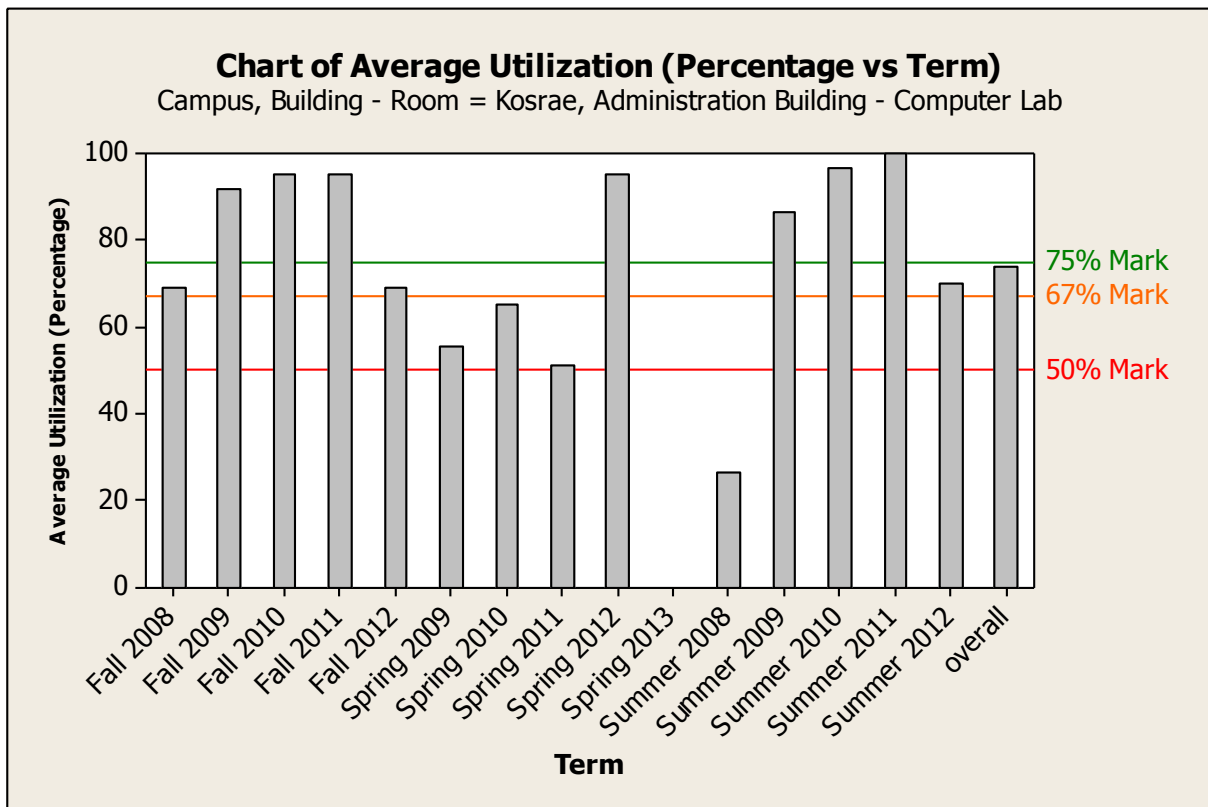


**Kosrae – 9 rooms**

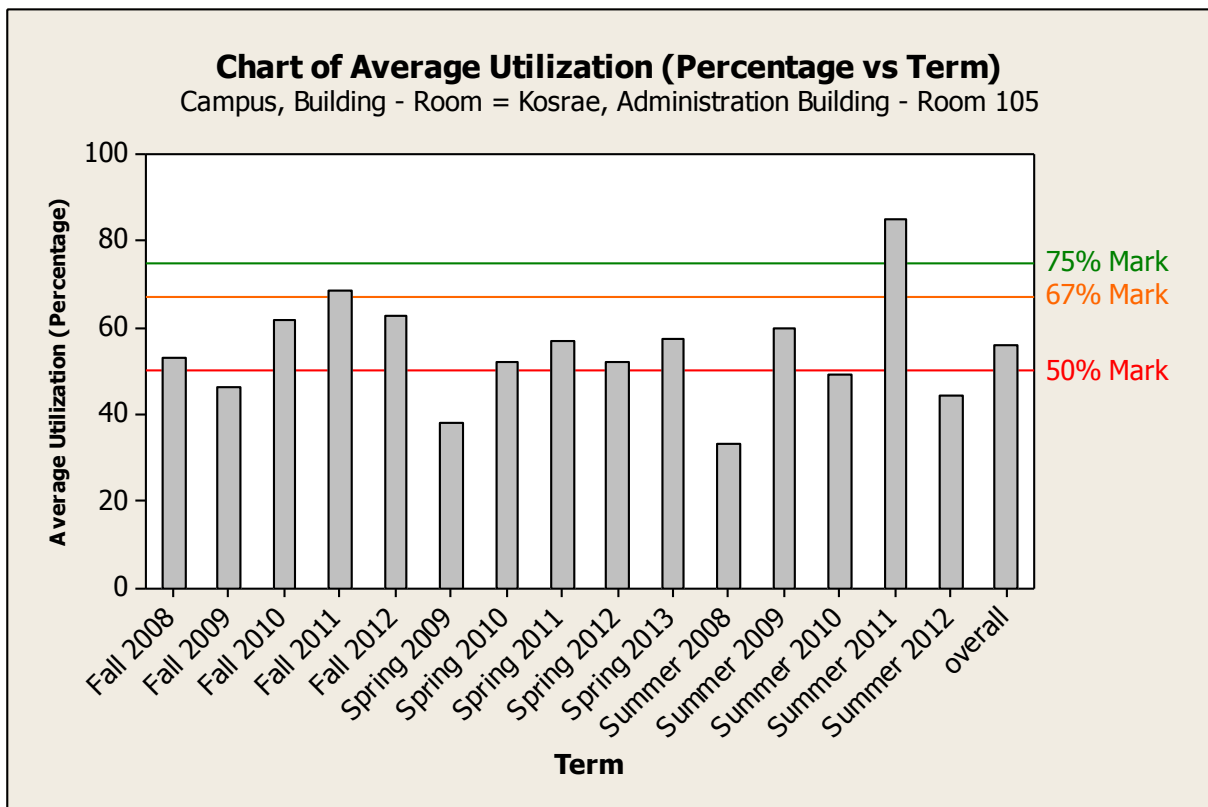
NOTE: Some rooms had average capacities above 100%, but these have only been shown to be 100% of the graphs.



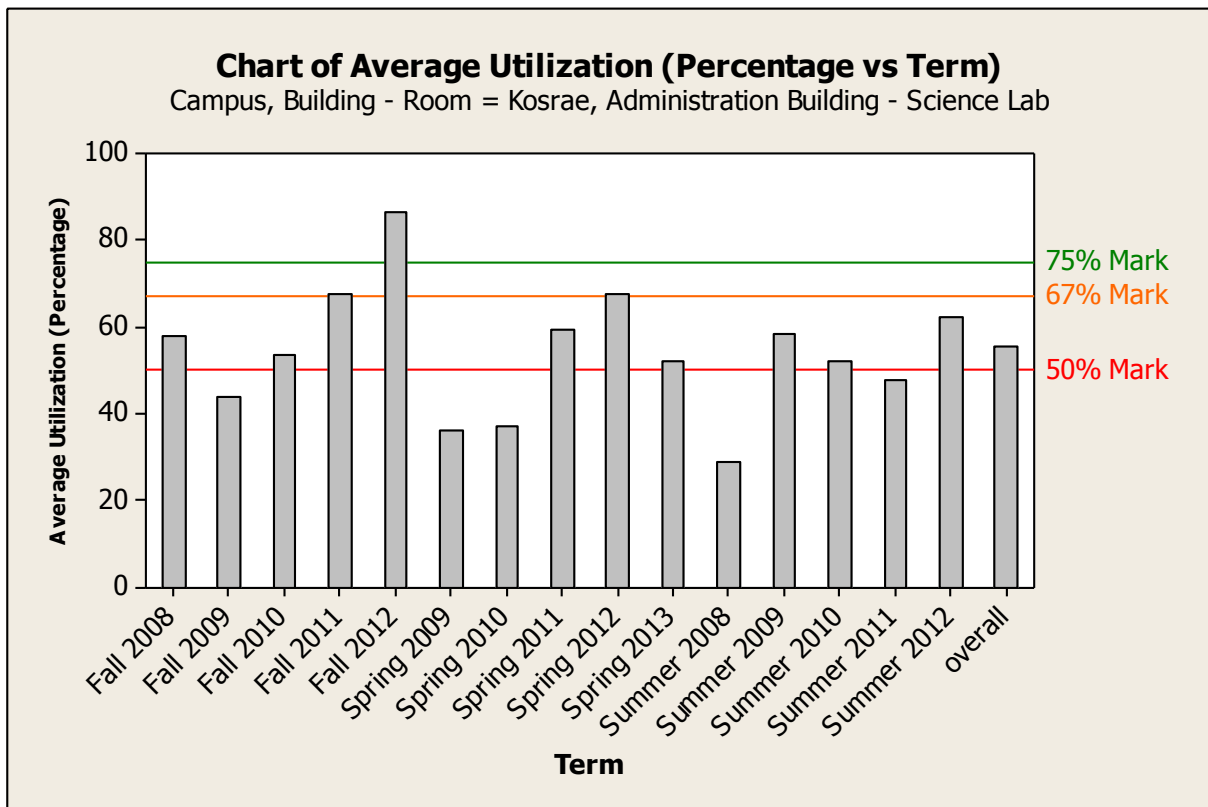
### Admin Building – Computer Lab



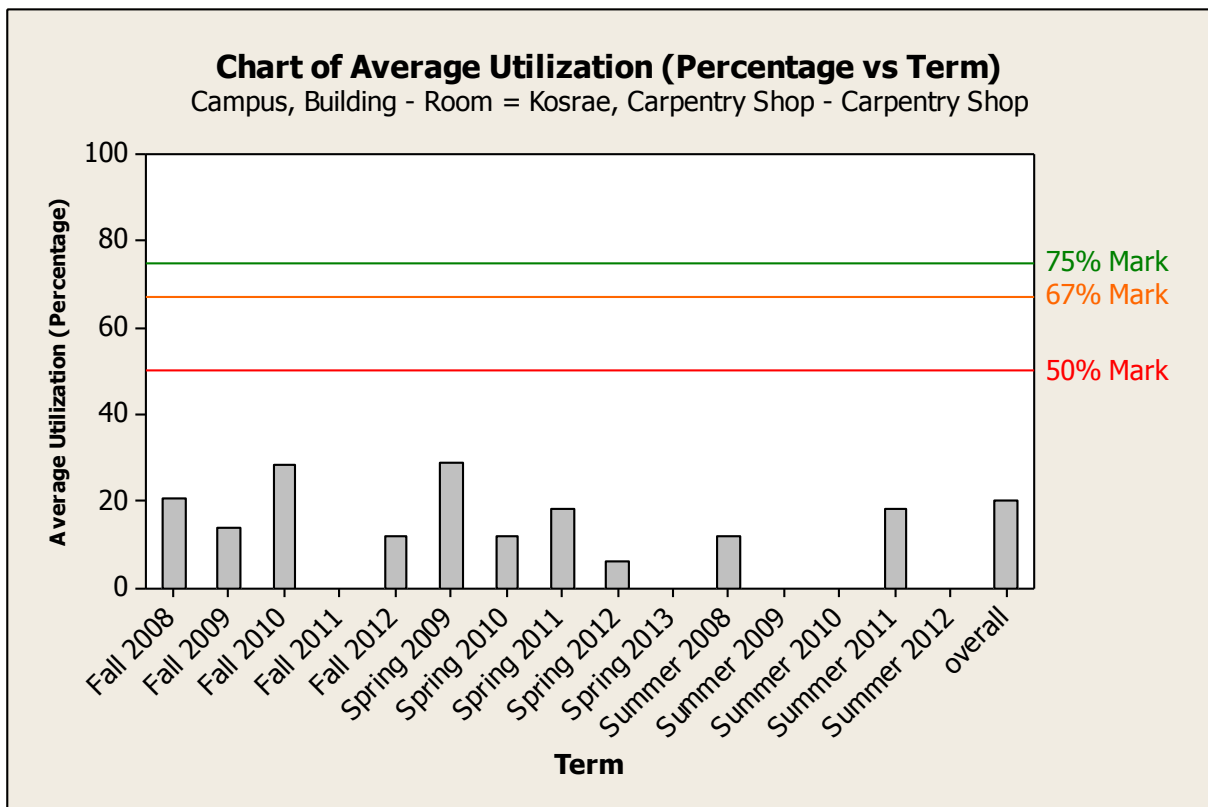
### Admin Room 105



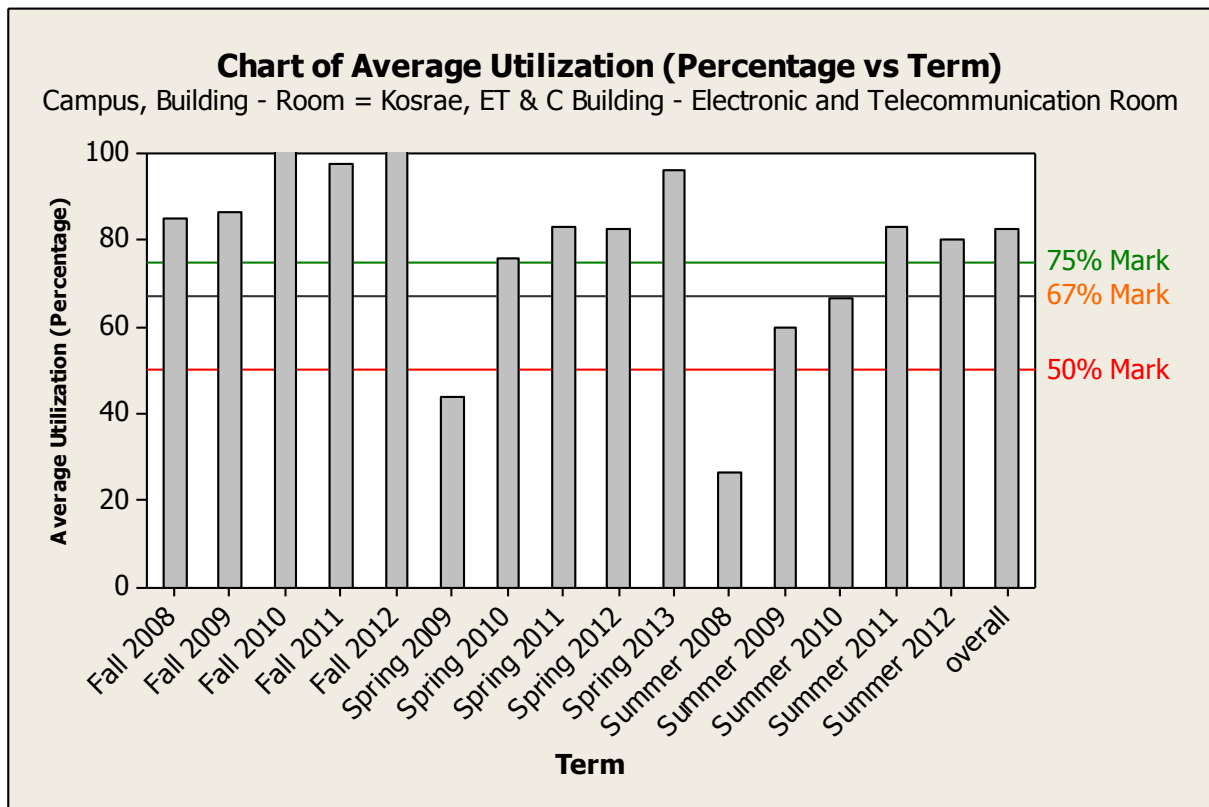
## Admin Science Lab



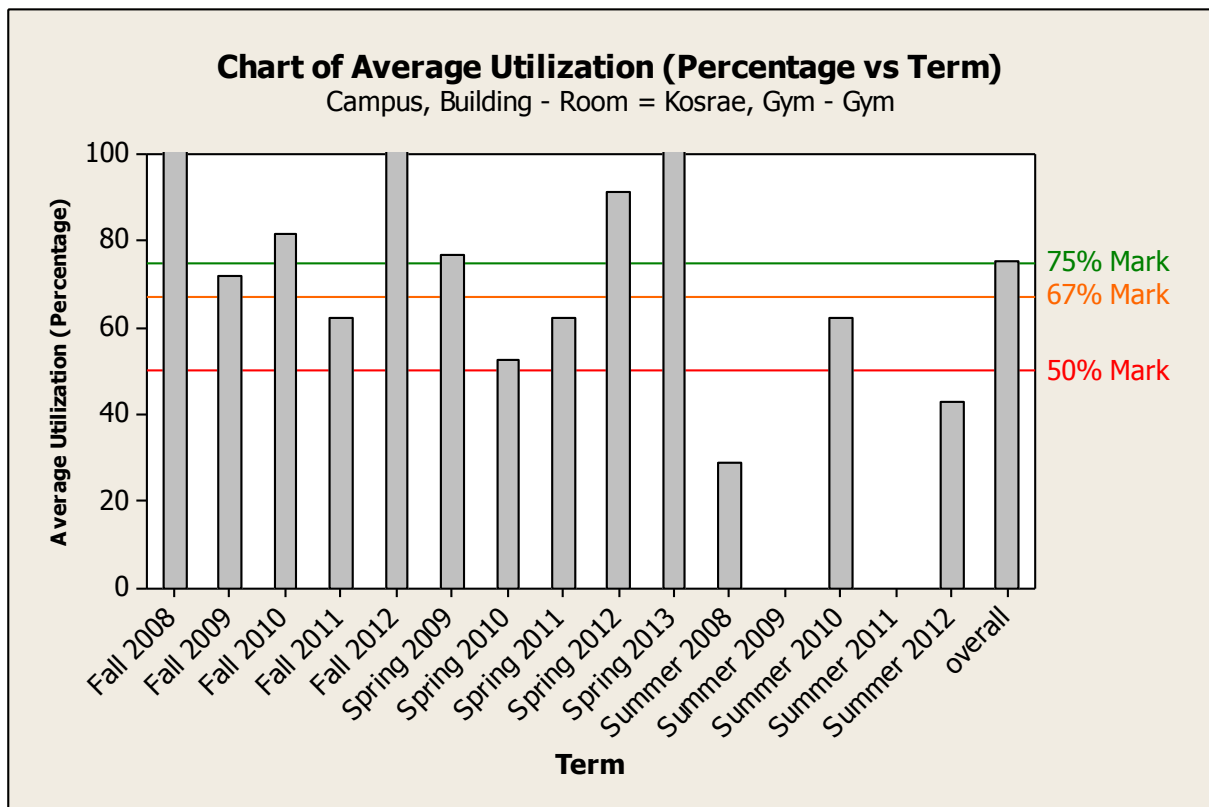
## Carpentry Shop



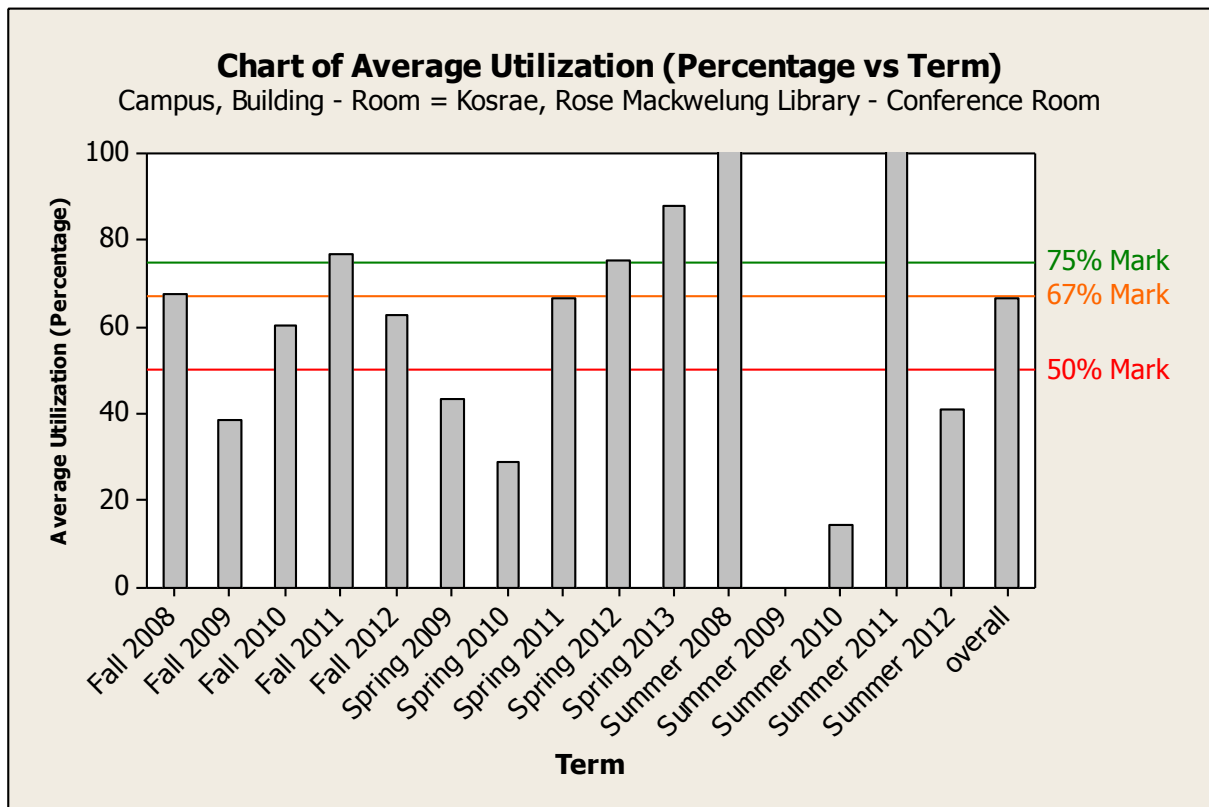
## Electronic and Telecommunication Room



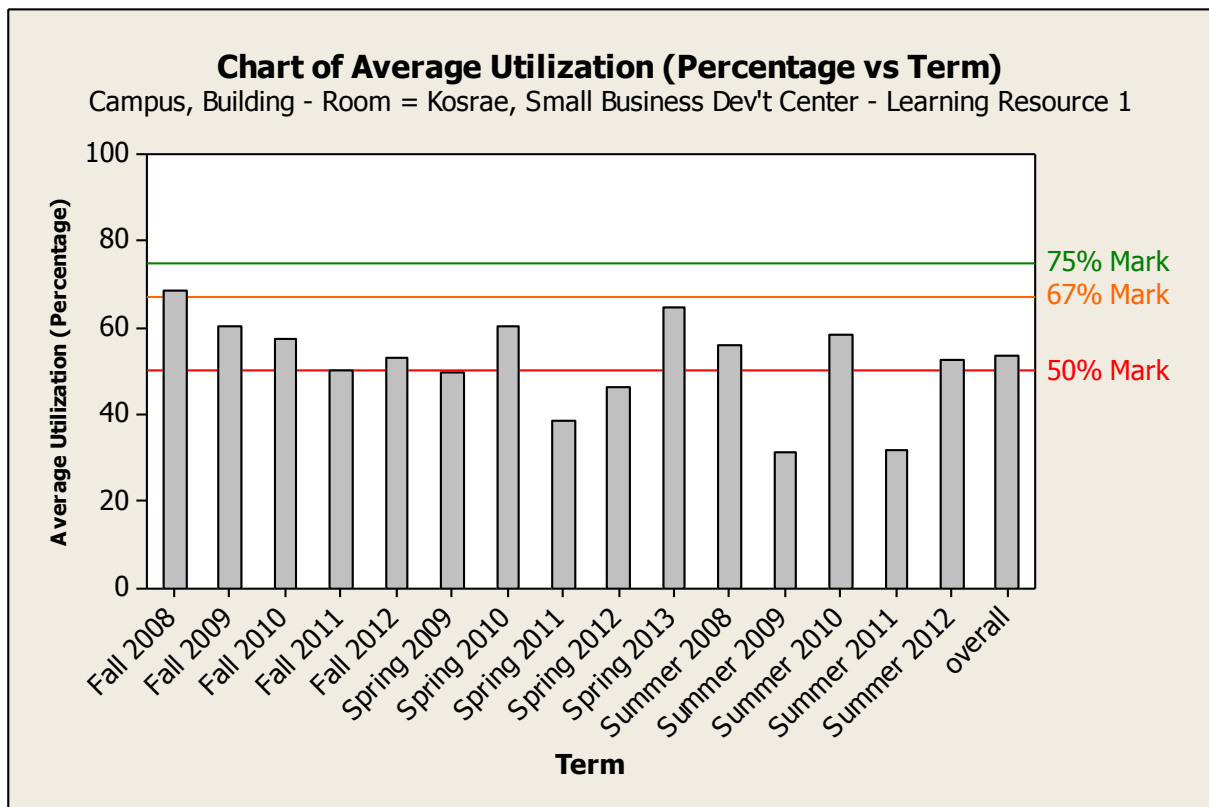
## Gym



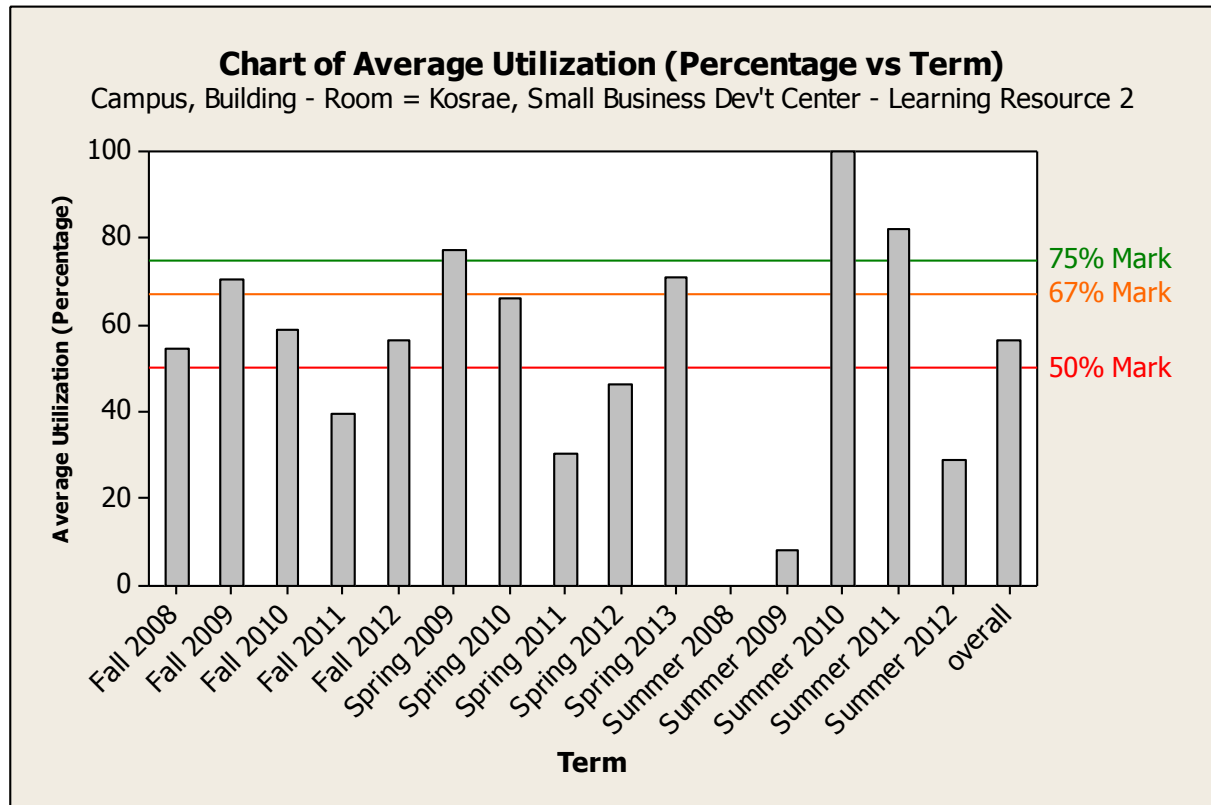
## Rose Mackwelung Library



## Small Business Learning Resource 1



## Small Business Learning Resource 2

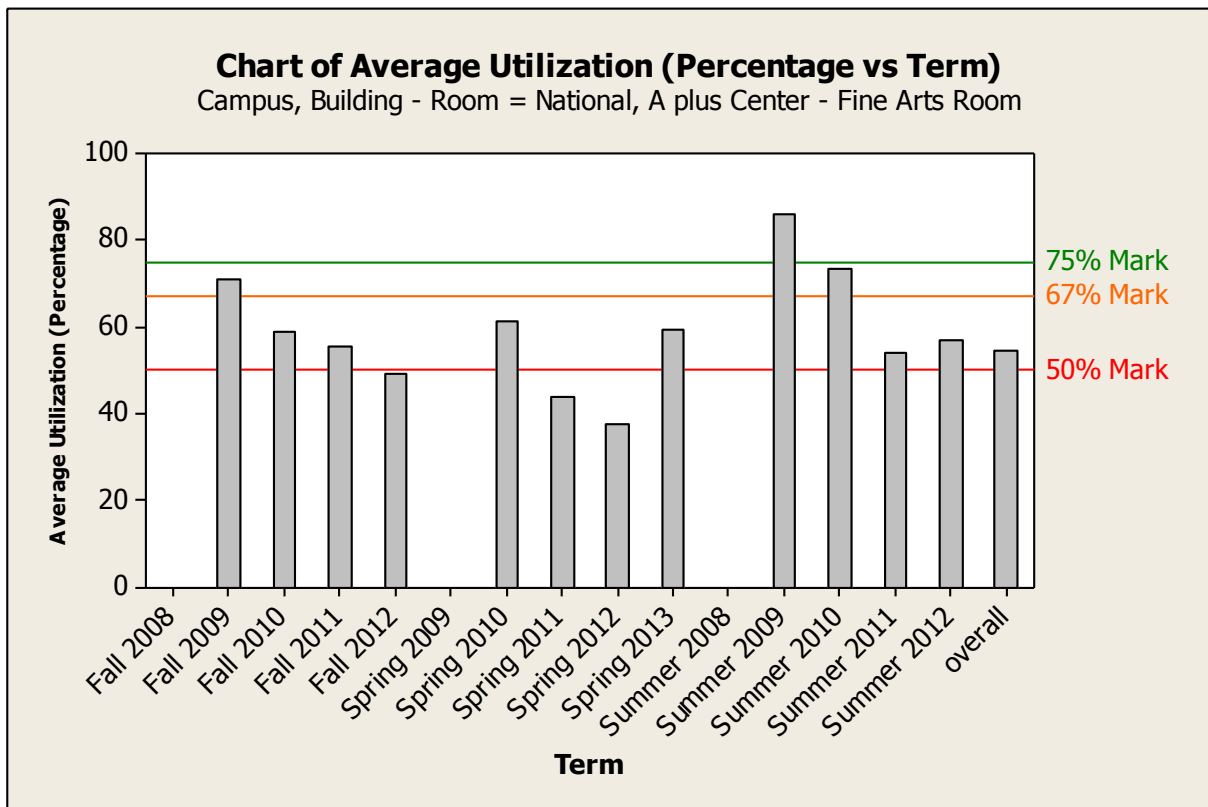


**National – 24 rooms**

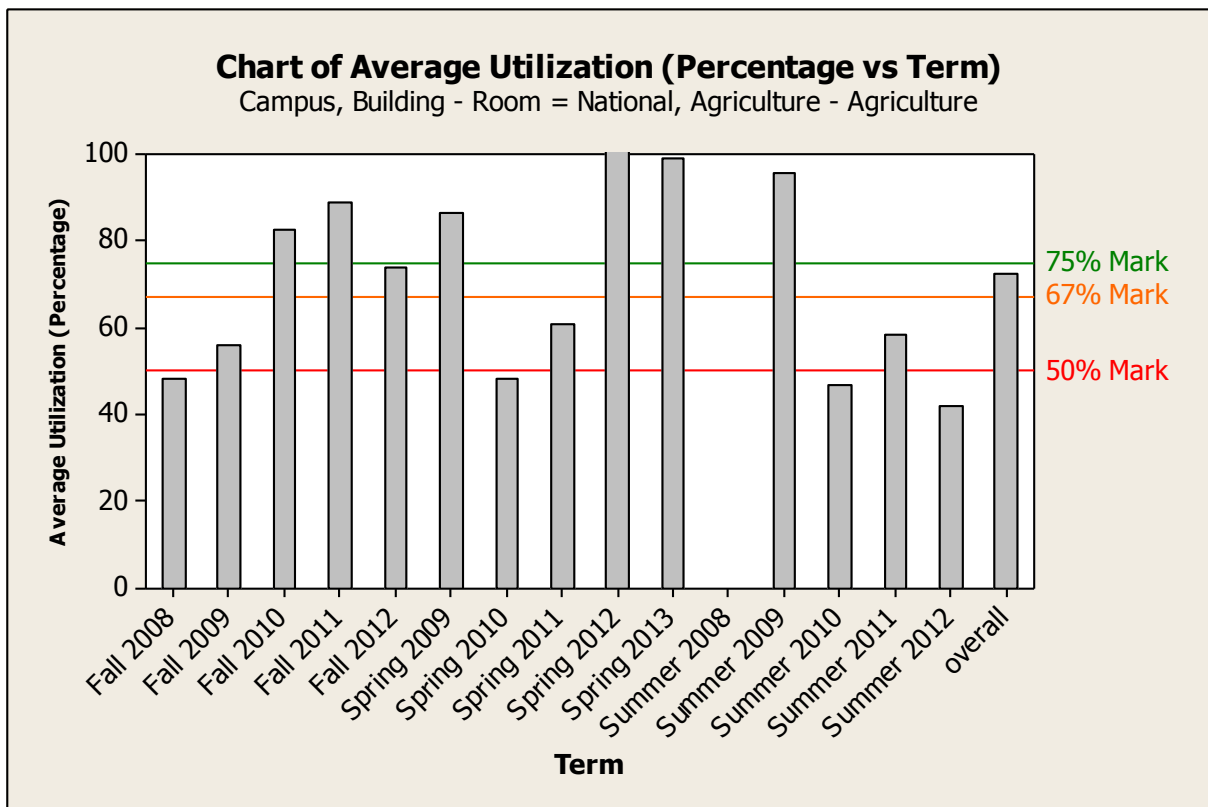
NOTE 1: Some rooms had average capacities above 100%, but these have only been shown to be 100% of the graphs.

NOTE 2: In the dataset there is a room entitled “Other” on the National campus. It is unknown if this is actually a unique location or a missing value in the dataset. The analysis has treated this “Other” space as a unique classroom.

## A plus center – Fine Arts Room

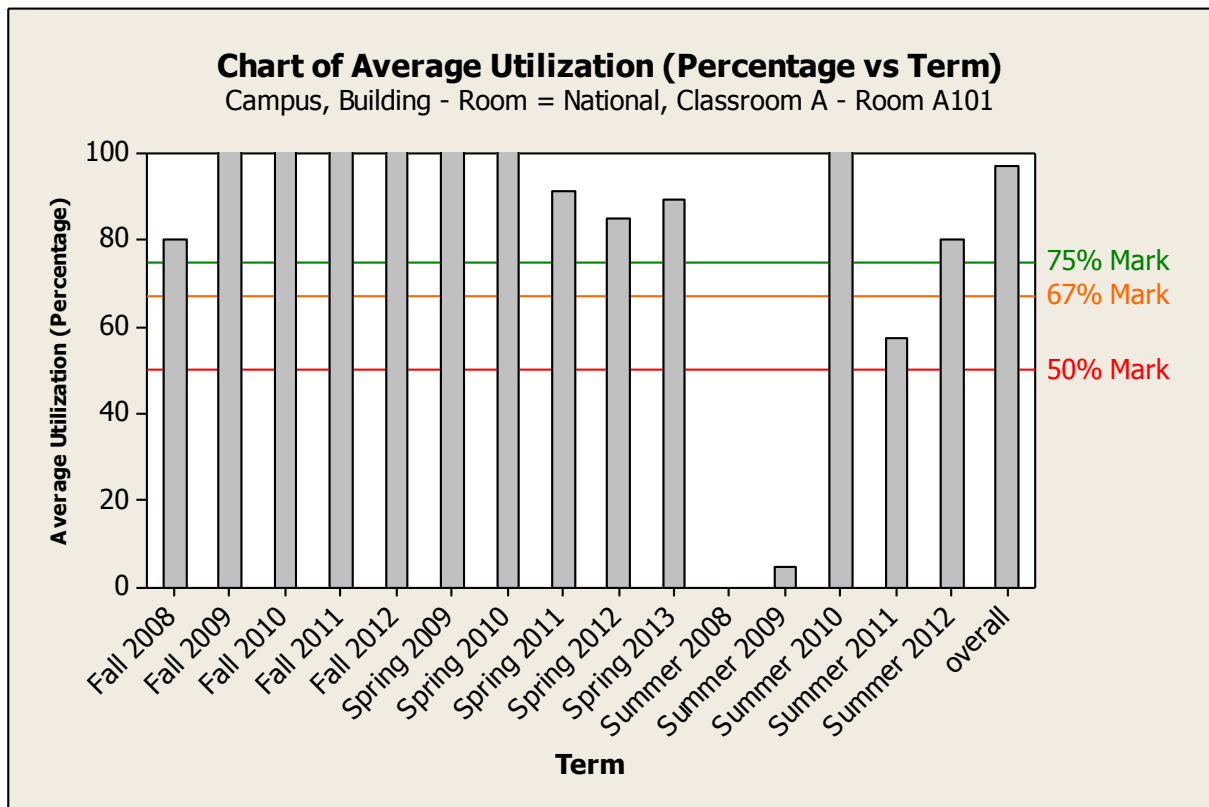


## Agriculture

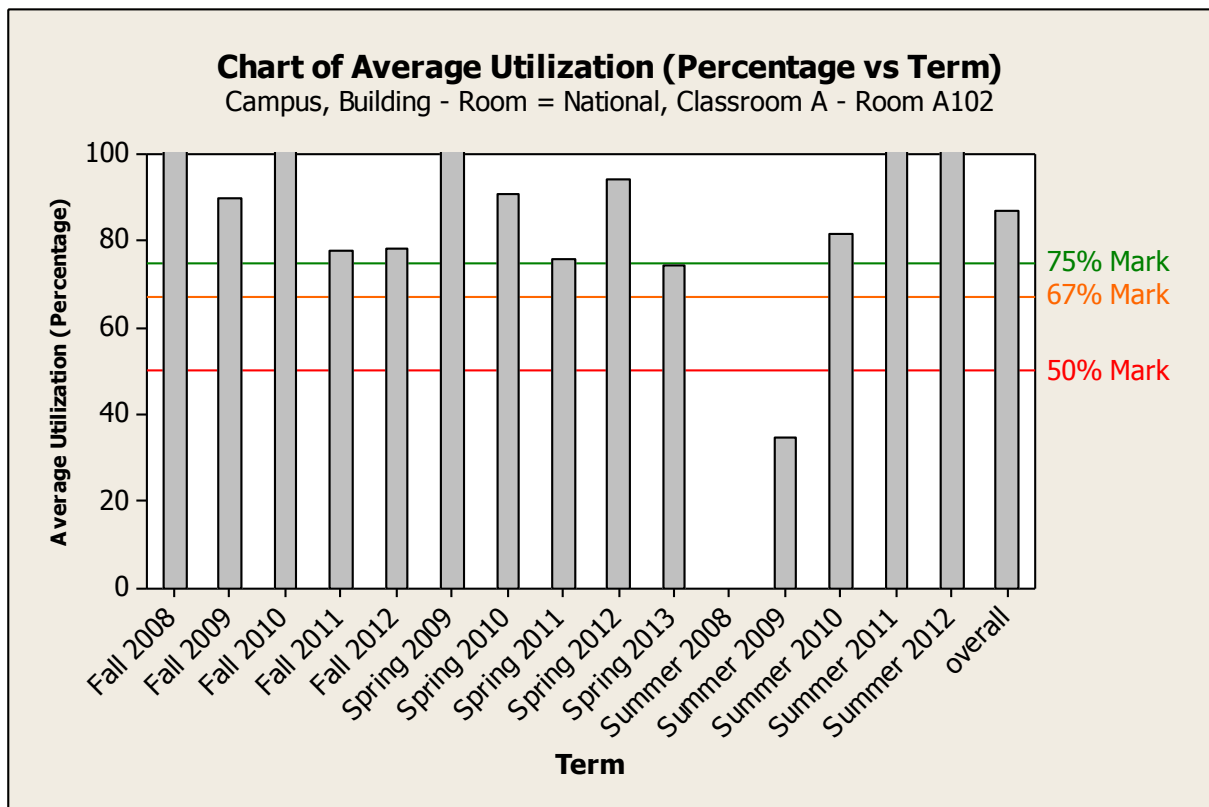




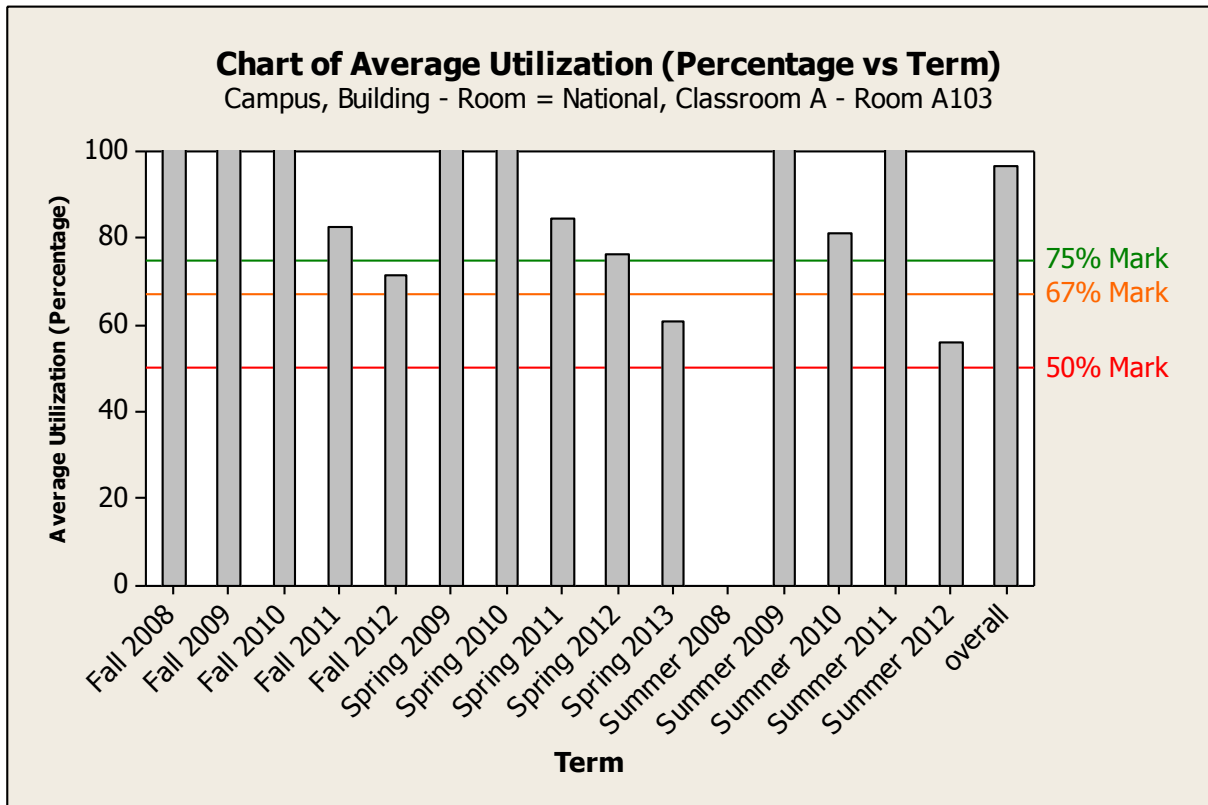
Classroom A – Room A101



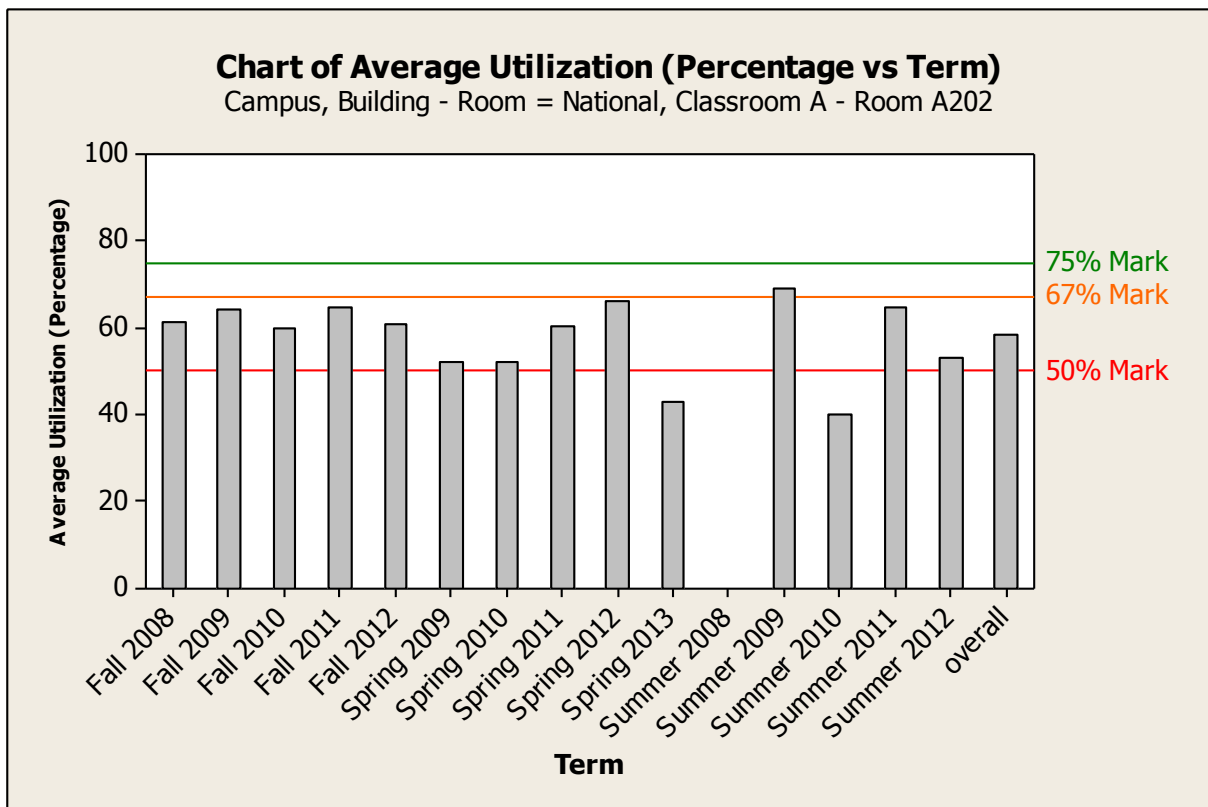
Classroom A – Room A102



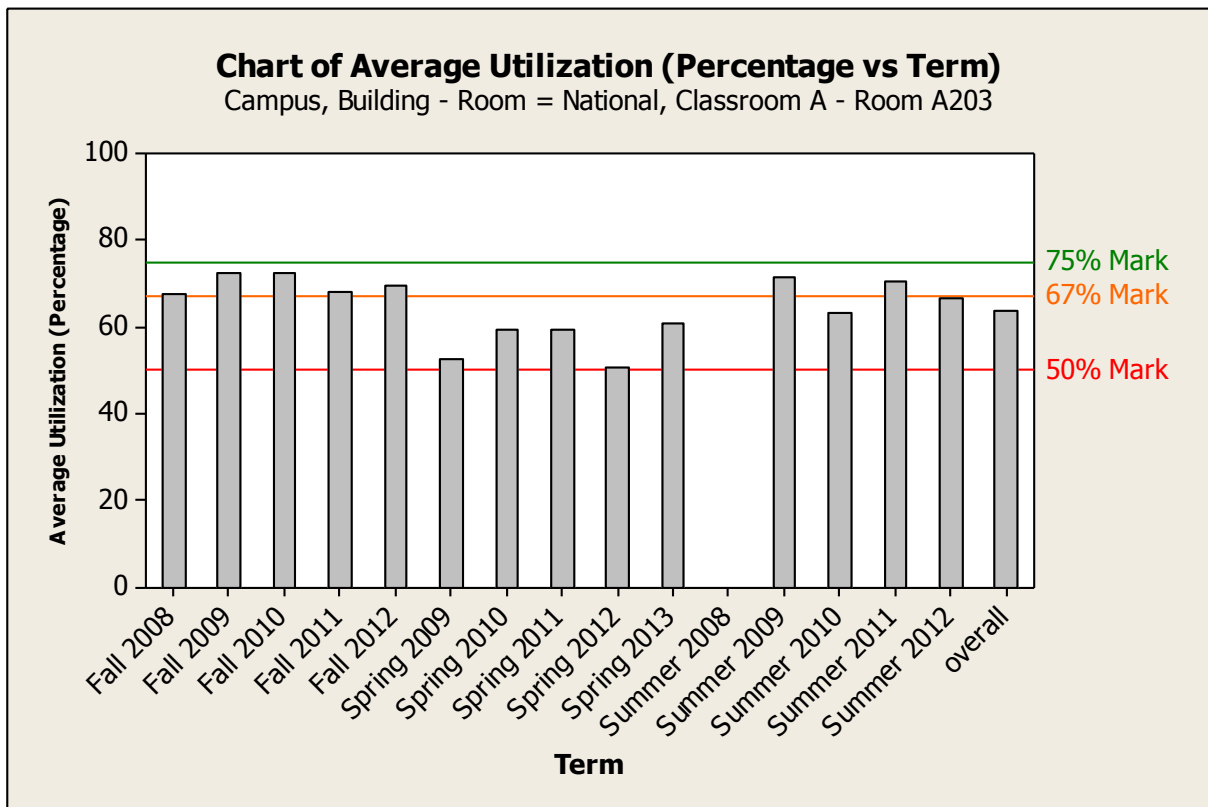
Classroom A – Room A103



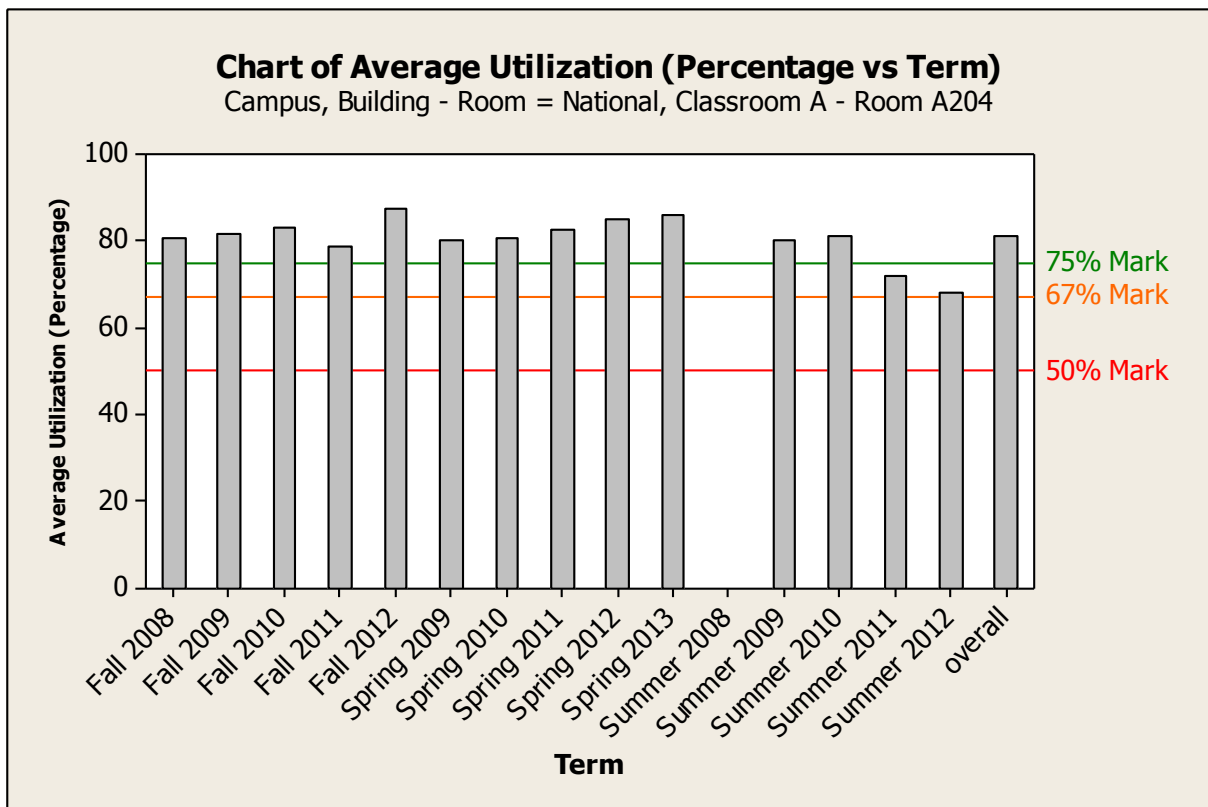
Classroom A – Room A202



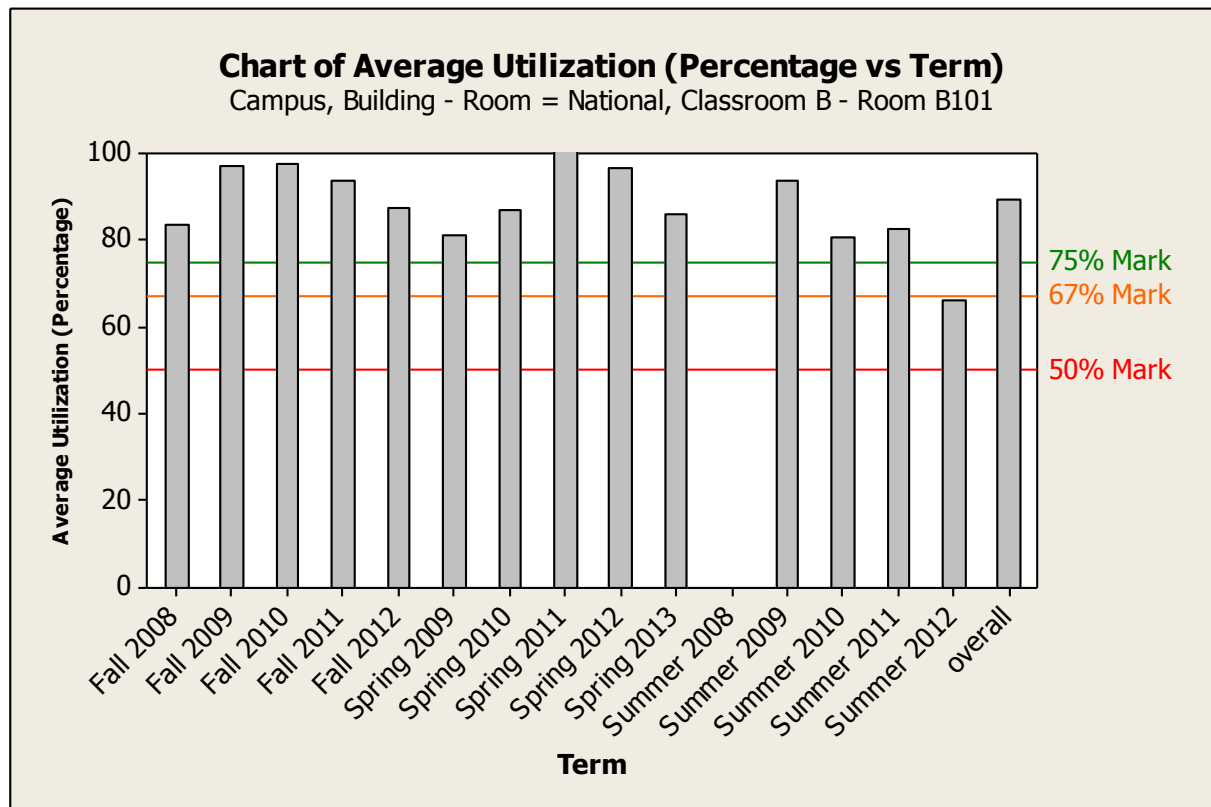
Classroom A – Room A203



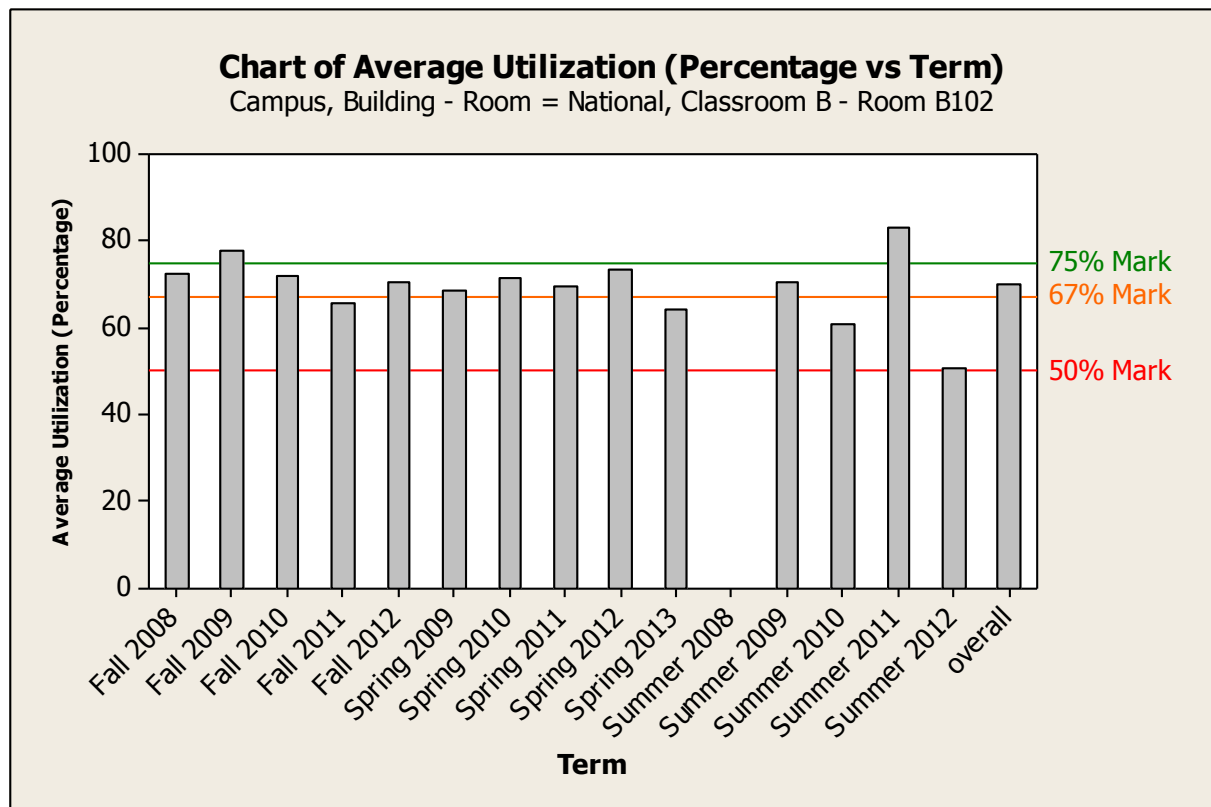
Classroom A – Room A204



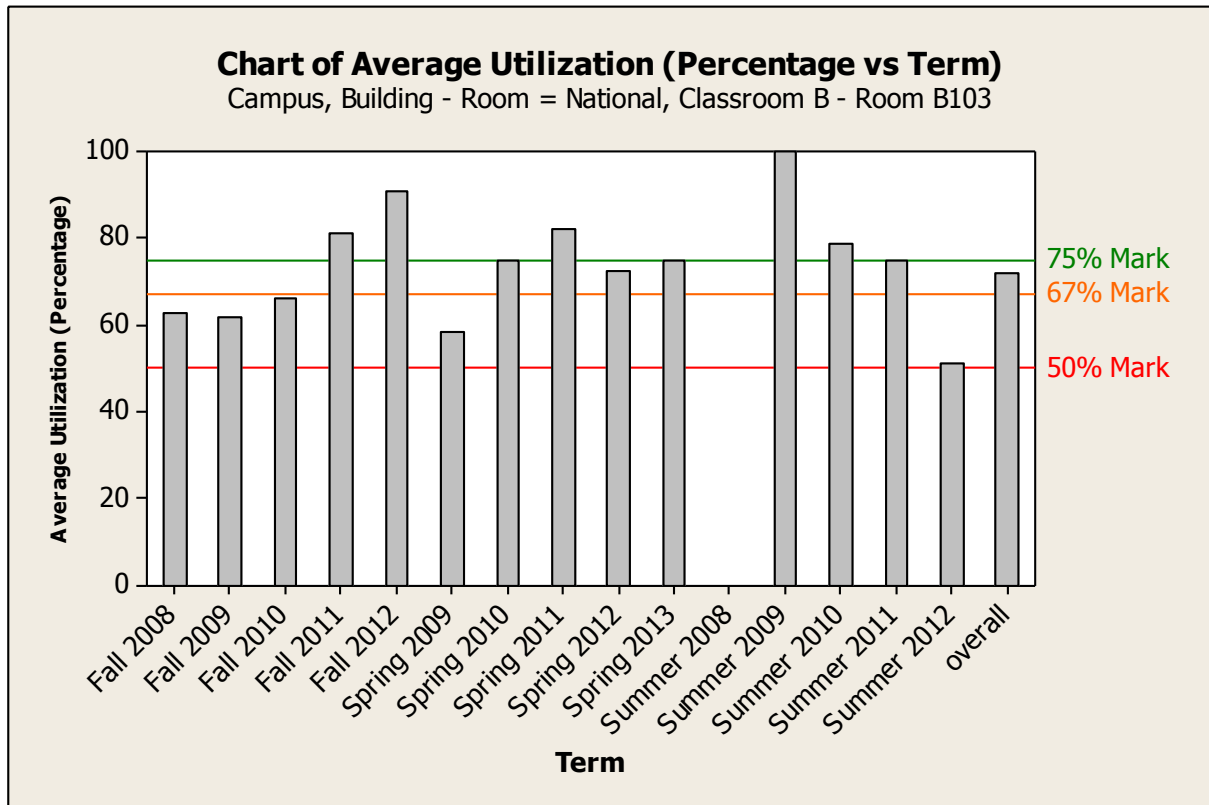
### Classroom B – Room B101



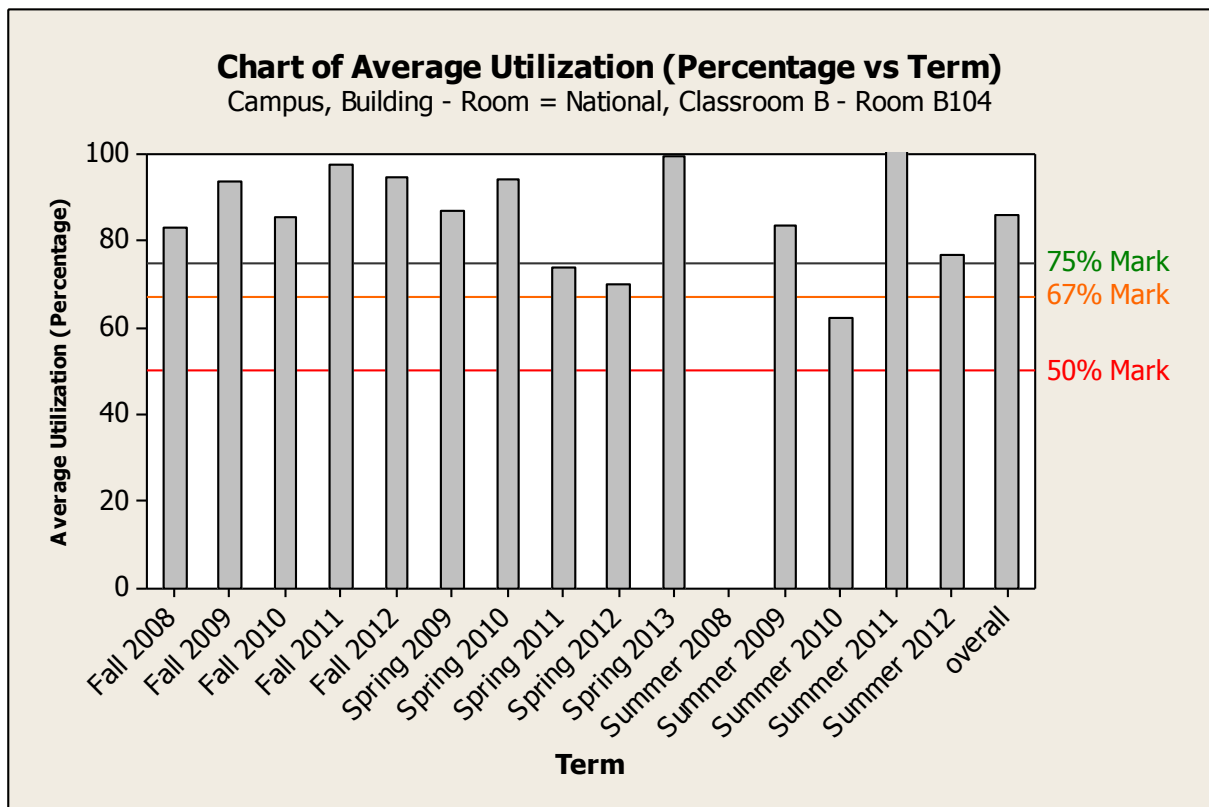
### Classroom B – Room B102



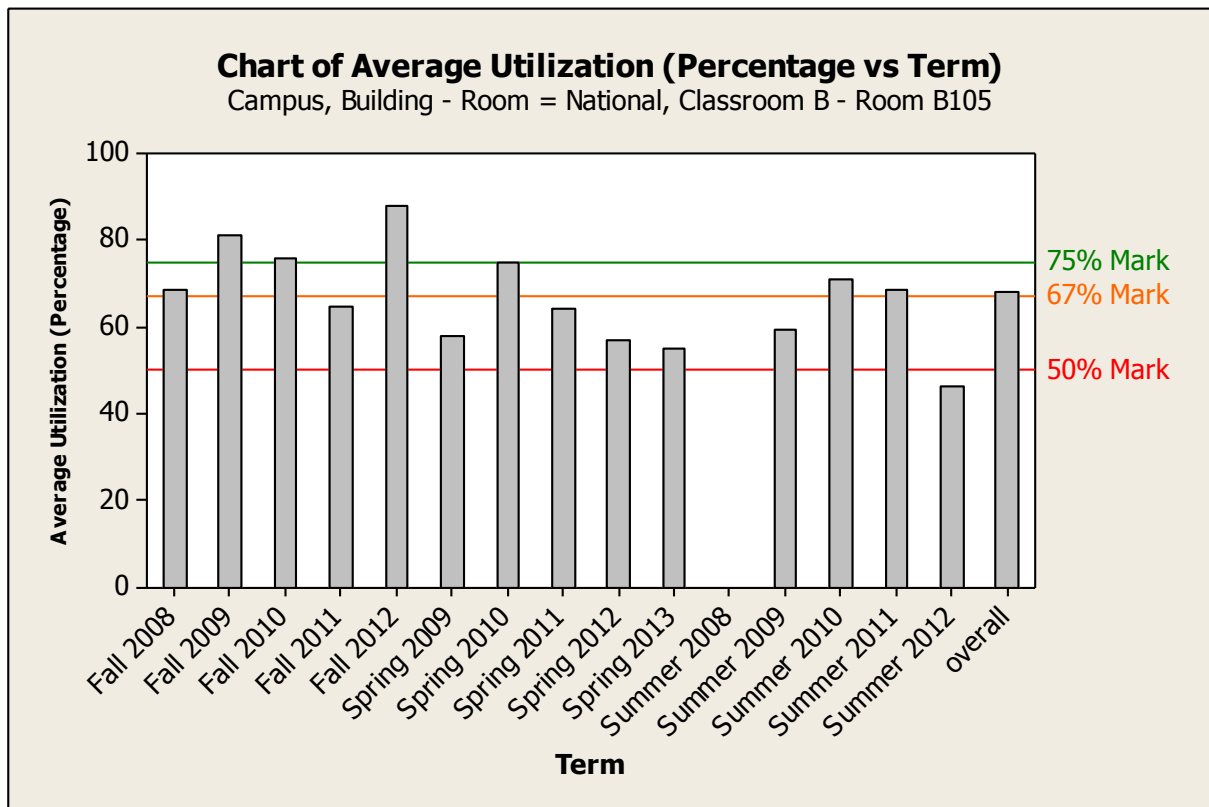
Classroom B – Room B103



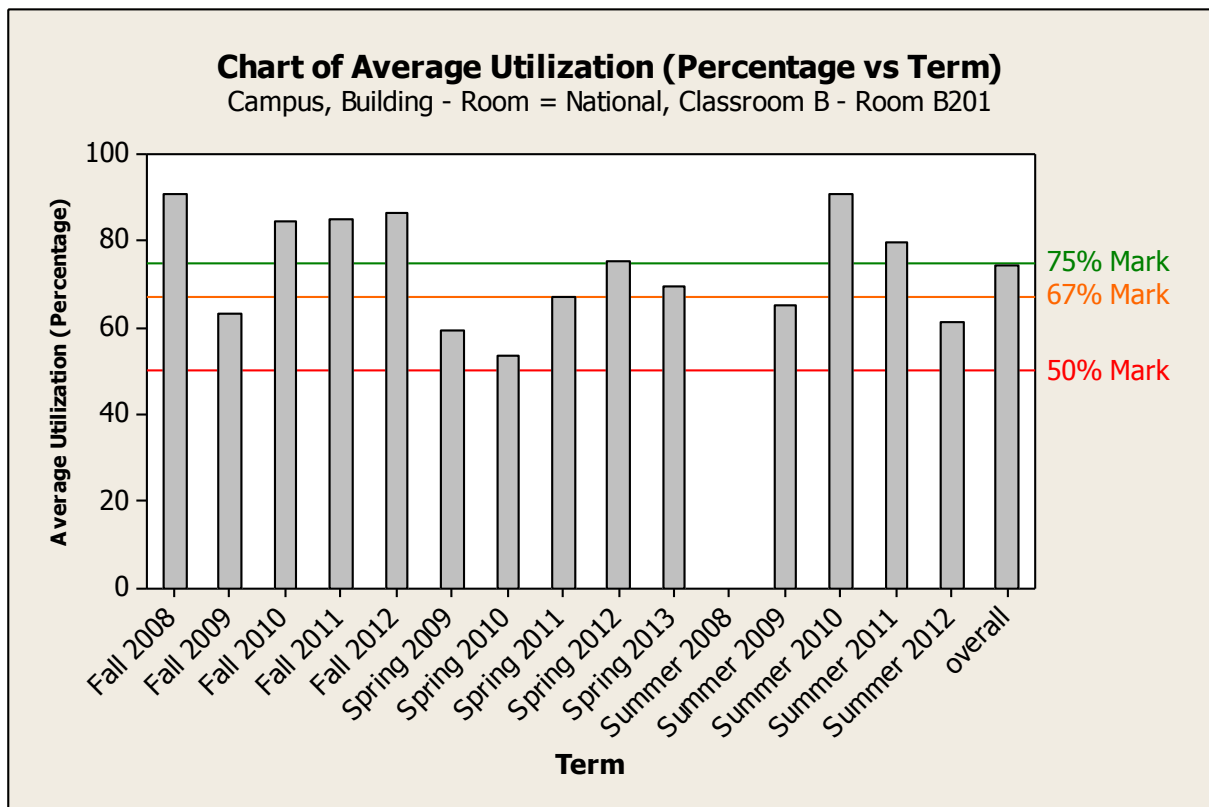
Classroom B – Room B104



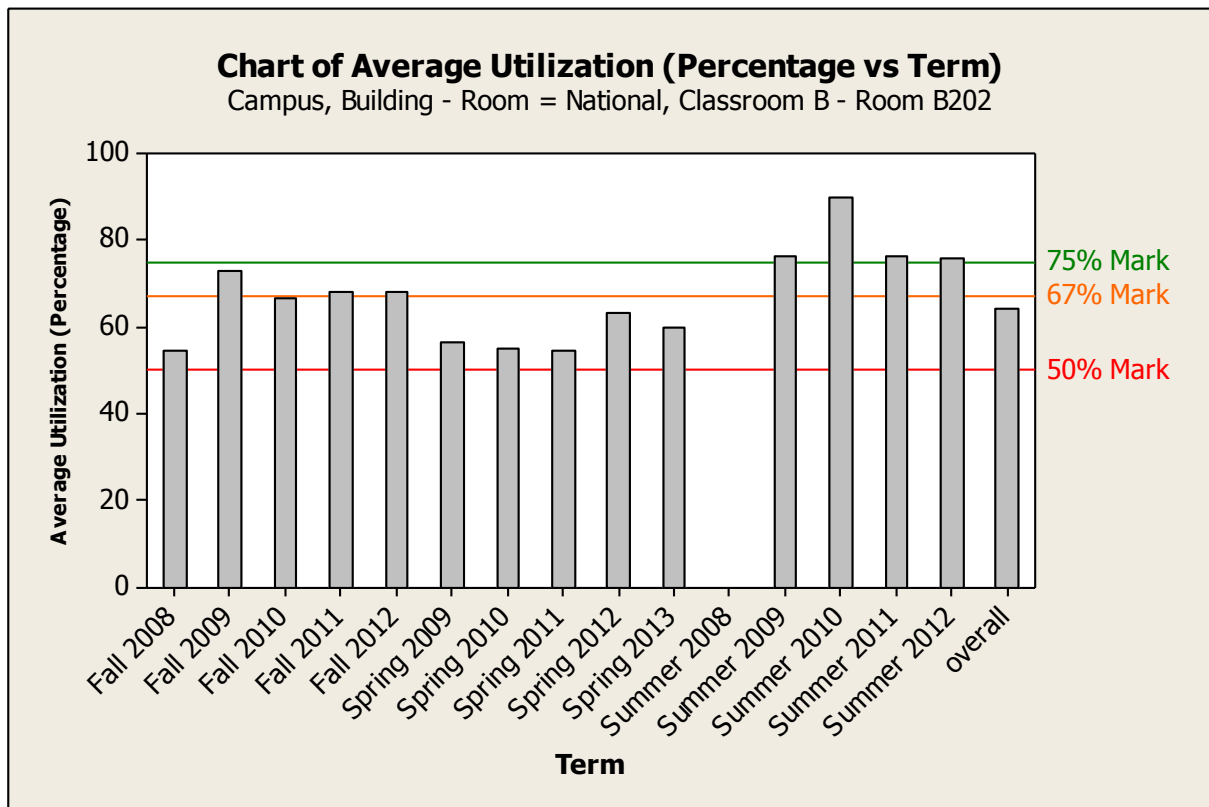
### Classroom B – Room B105



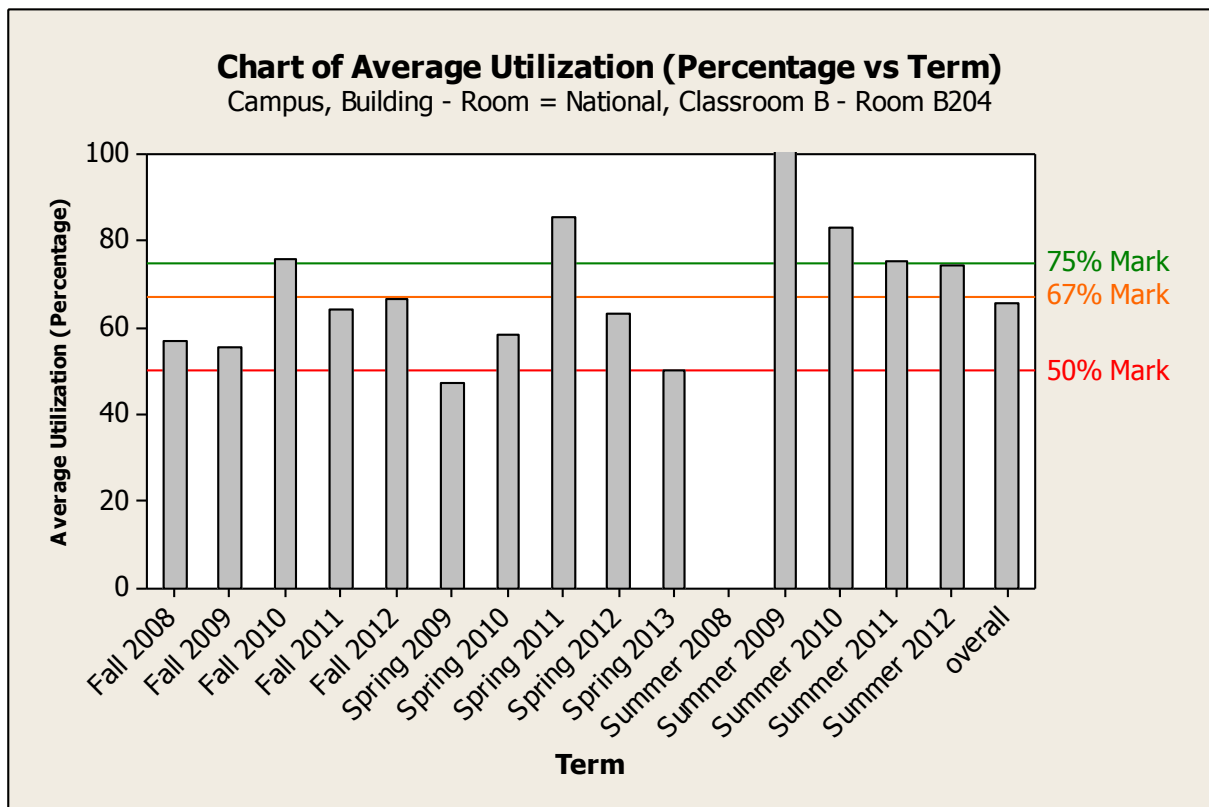
### Classroom B – Room B201



Classroom B – Room B202

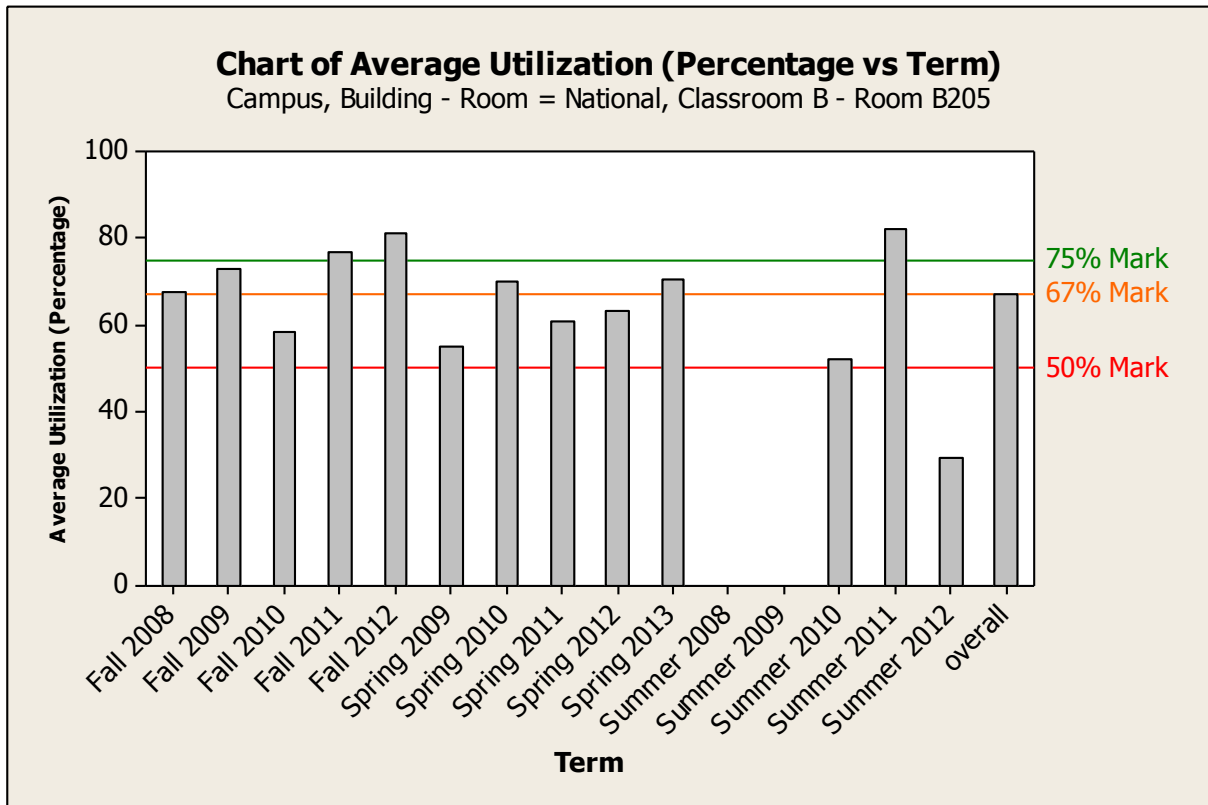


Classroom B – Room B204

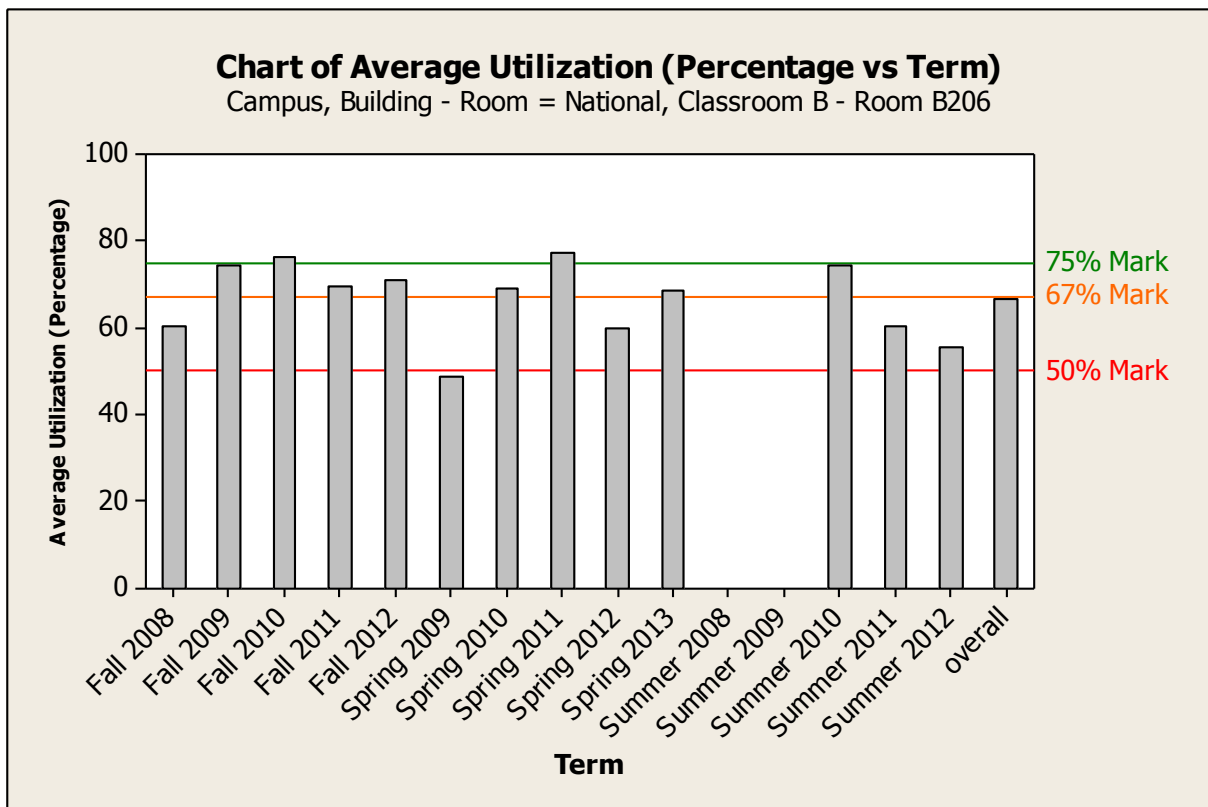




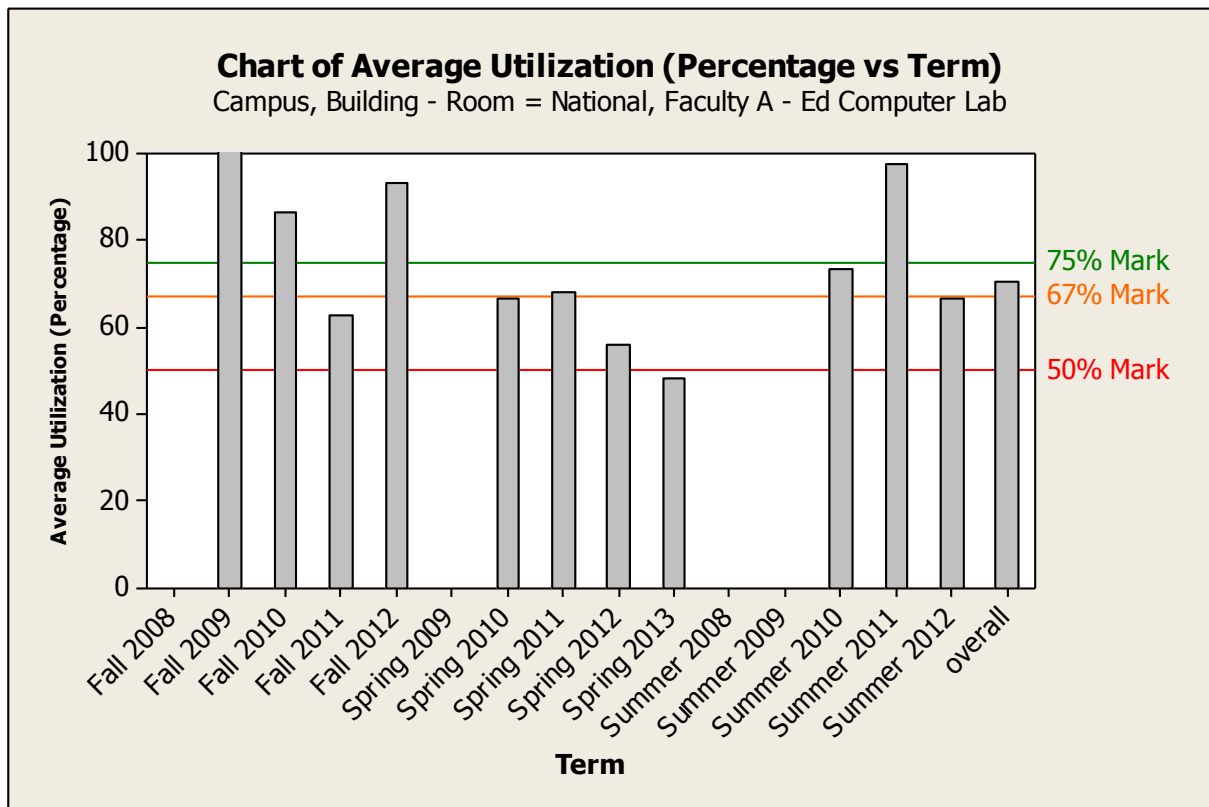
Classroom B – Room B205



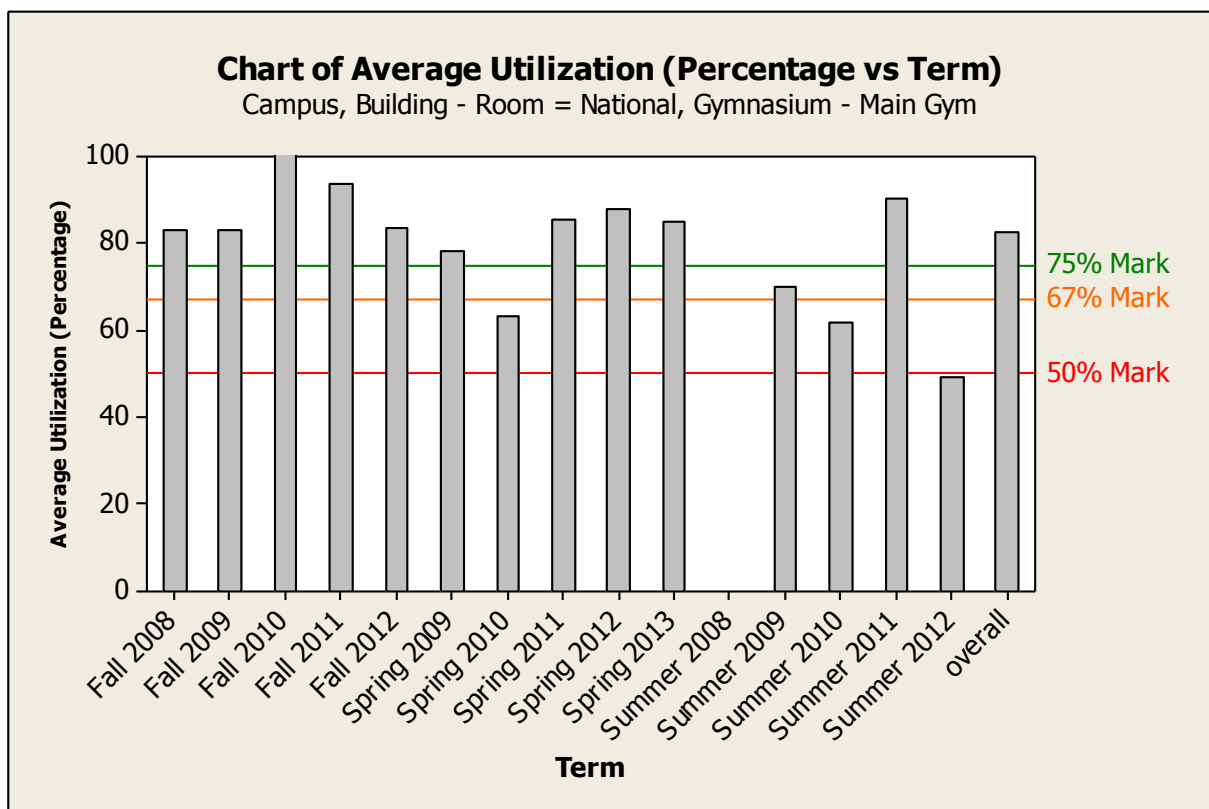
Classroom B – Room B206



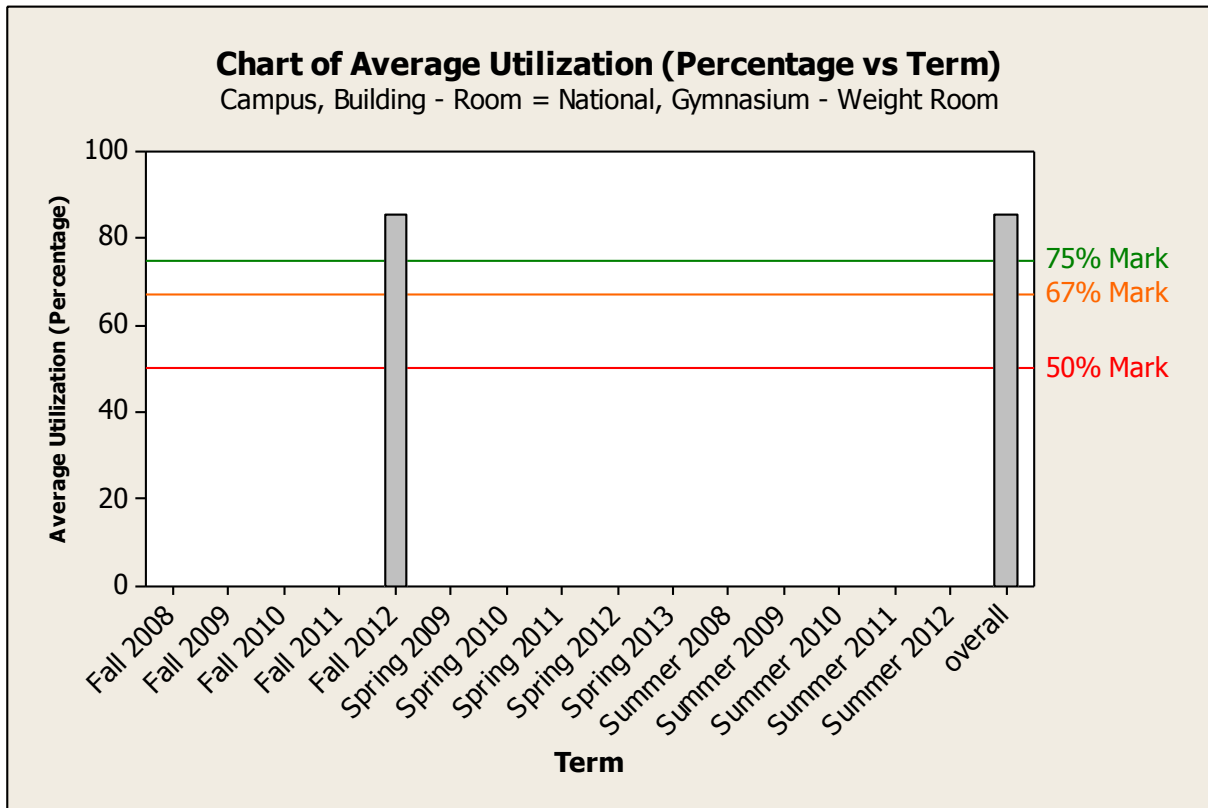
### Faculty A, Ed Computer Lab



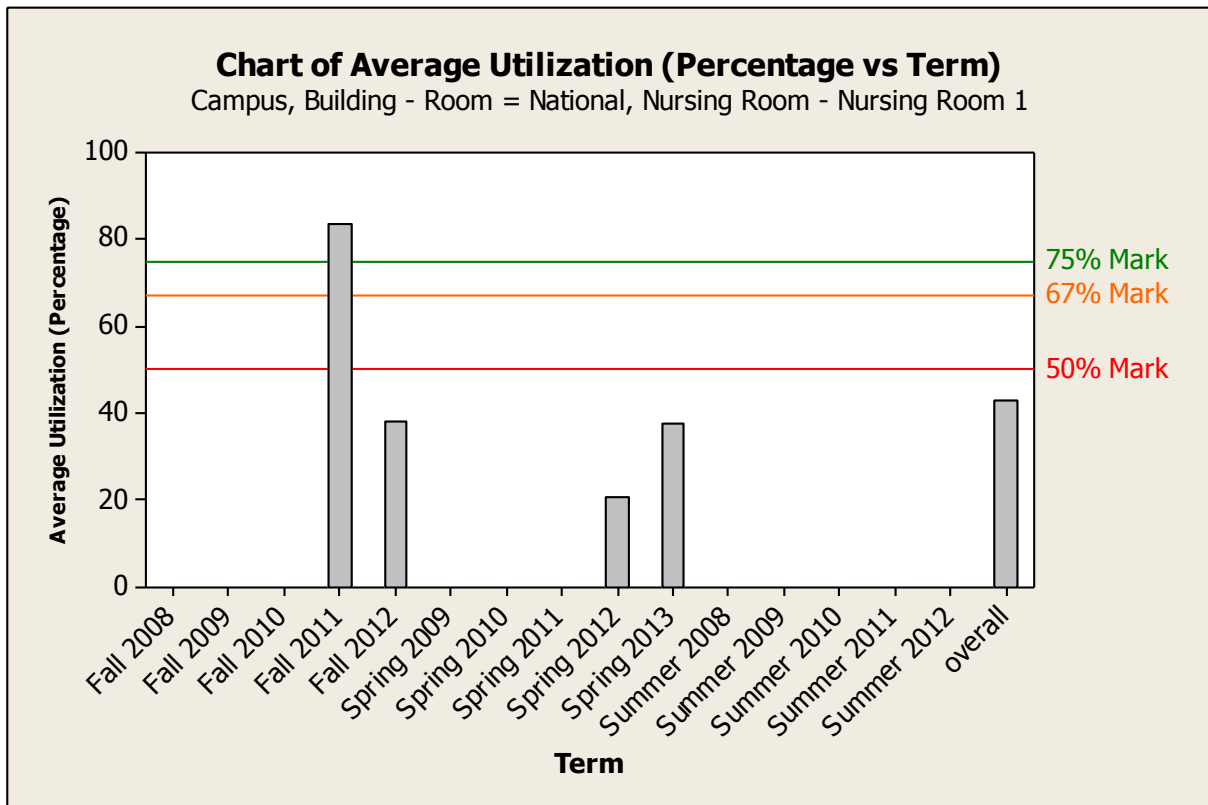
### Main Gym



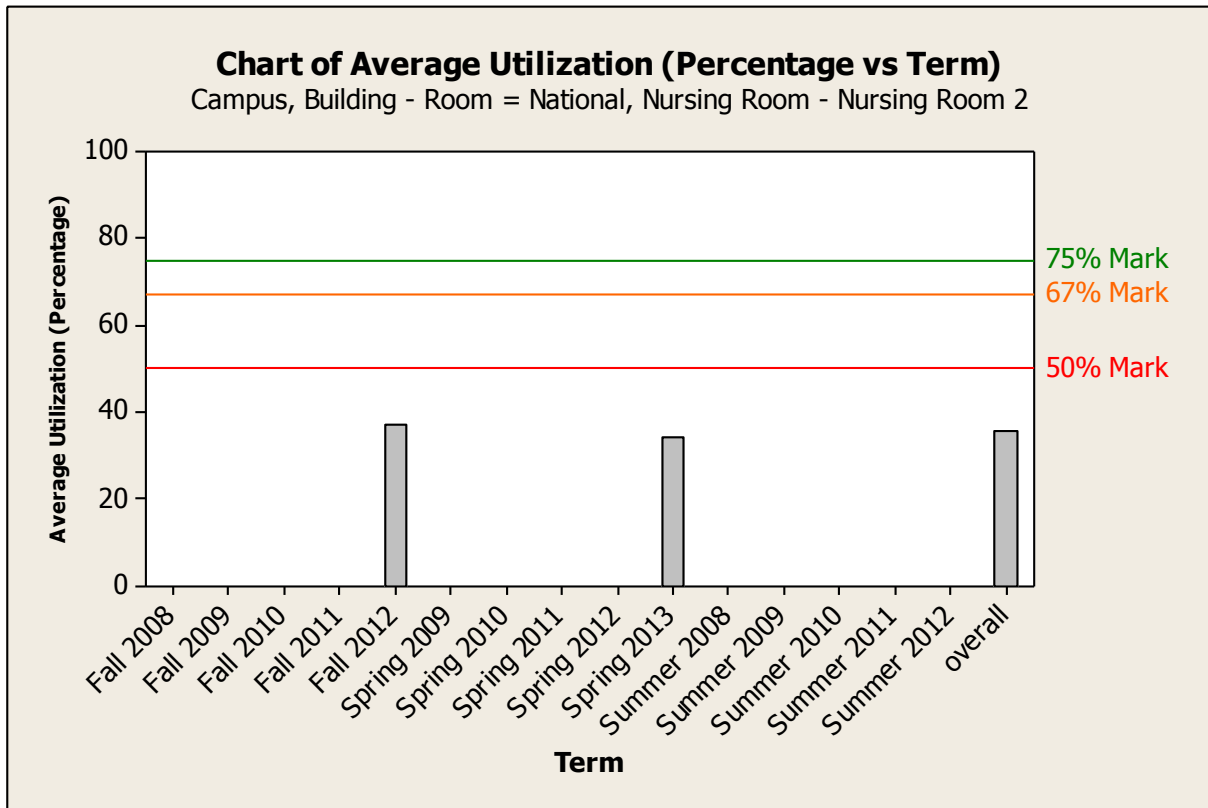
## Weight Room



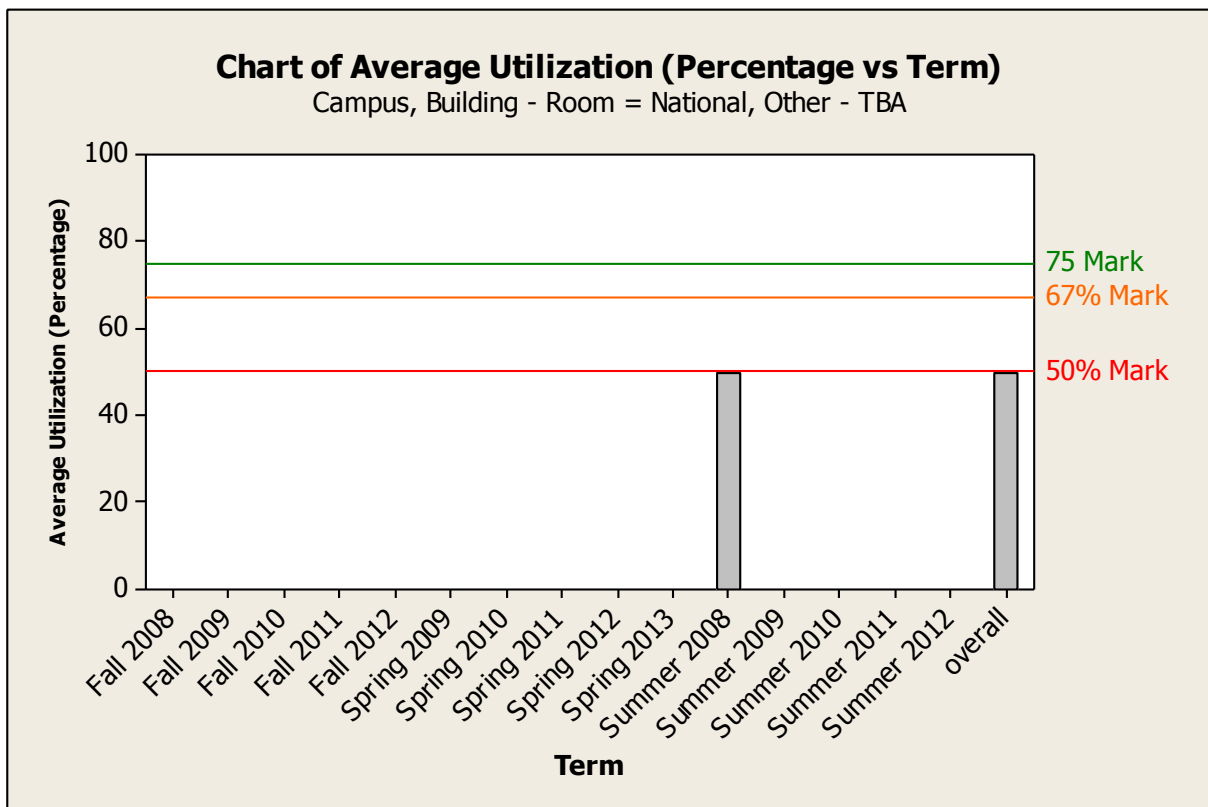
## Nursing Room 1



## Nursing Room 2



## Other – TBA

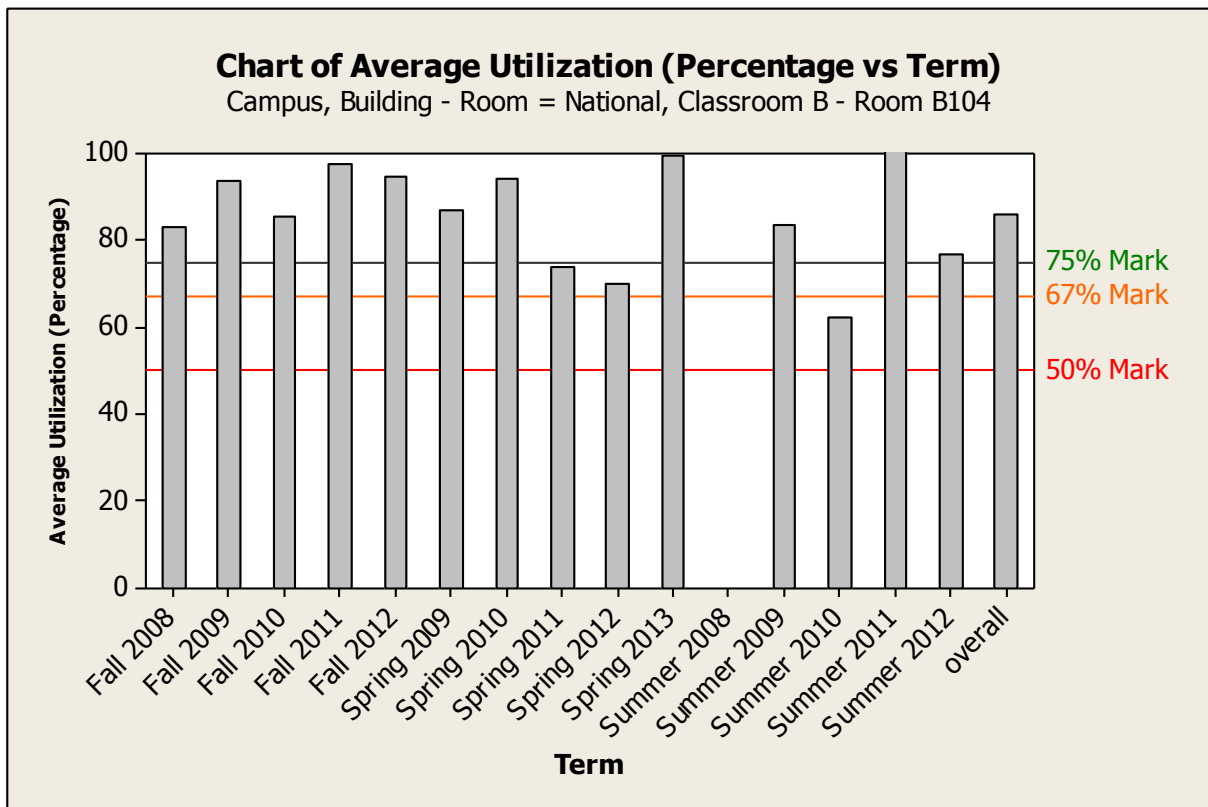


### **Pohnpei – 21 Rooms**

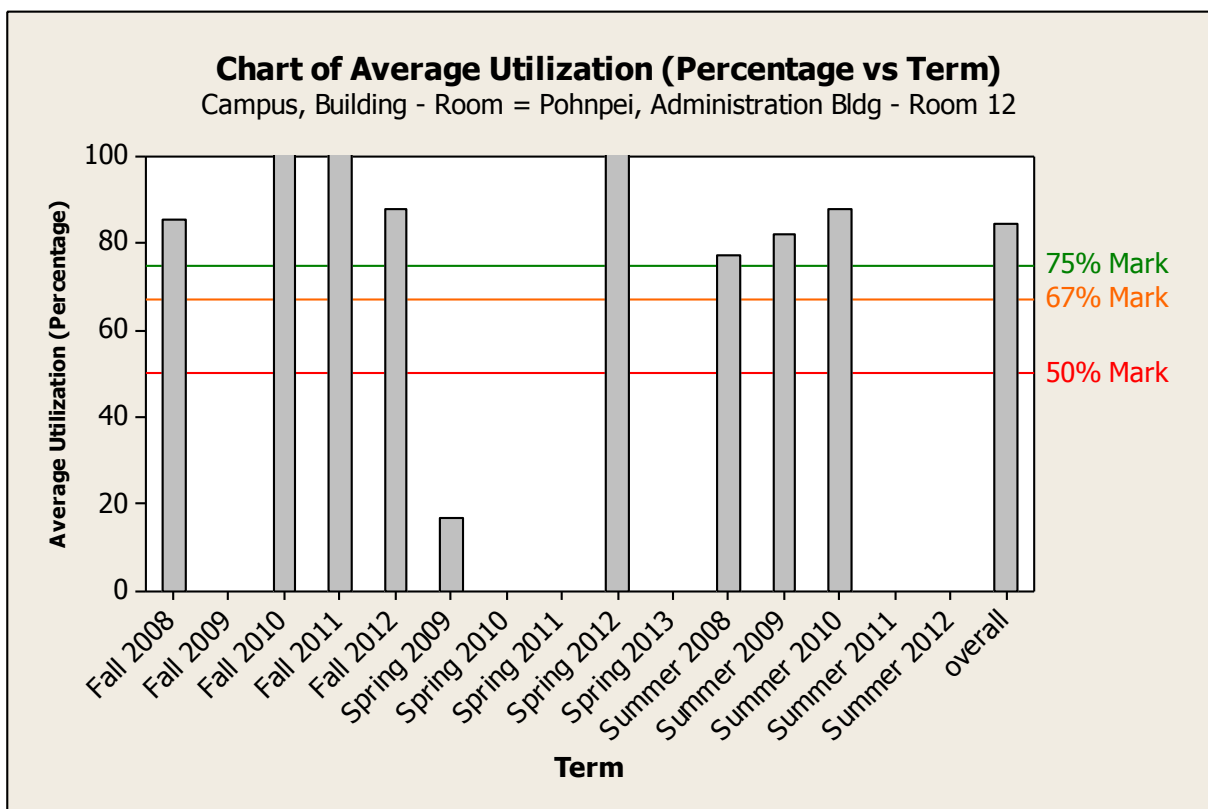
NOTE: Some rooms had average capacities above 100%, but these have only been shown to be 100% of the graphs.

NOTE 2: In the dataset there is a room entitled “Other” on the Pohnpei campus. It is unknown if this is actually a unique location or a missing value in the dataset. The analysis has treated this “Other” space as a unique classroom.

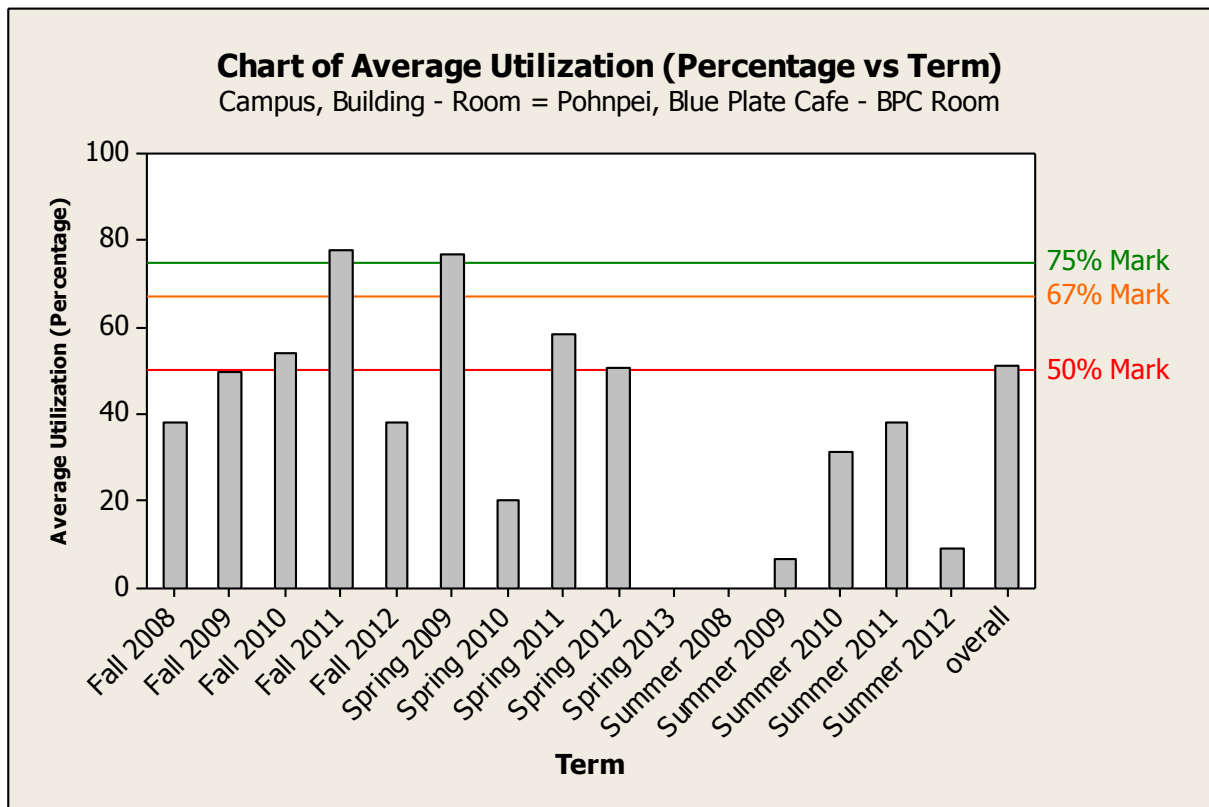
Admin Bldg – Room 11



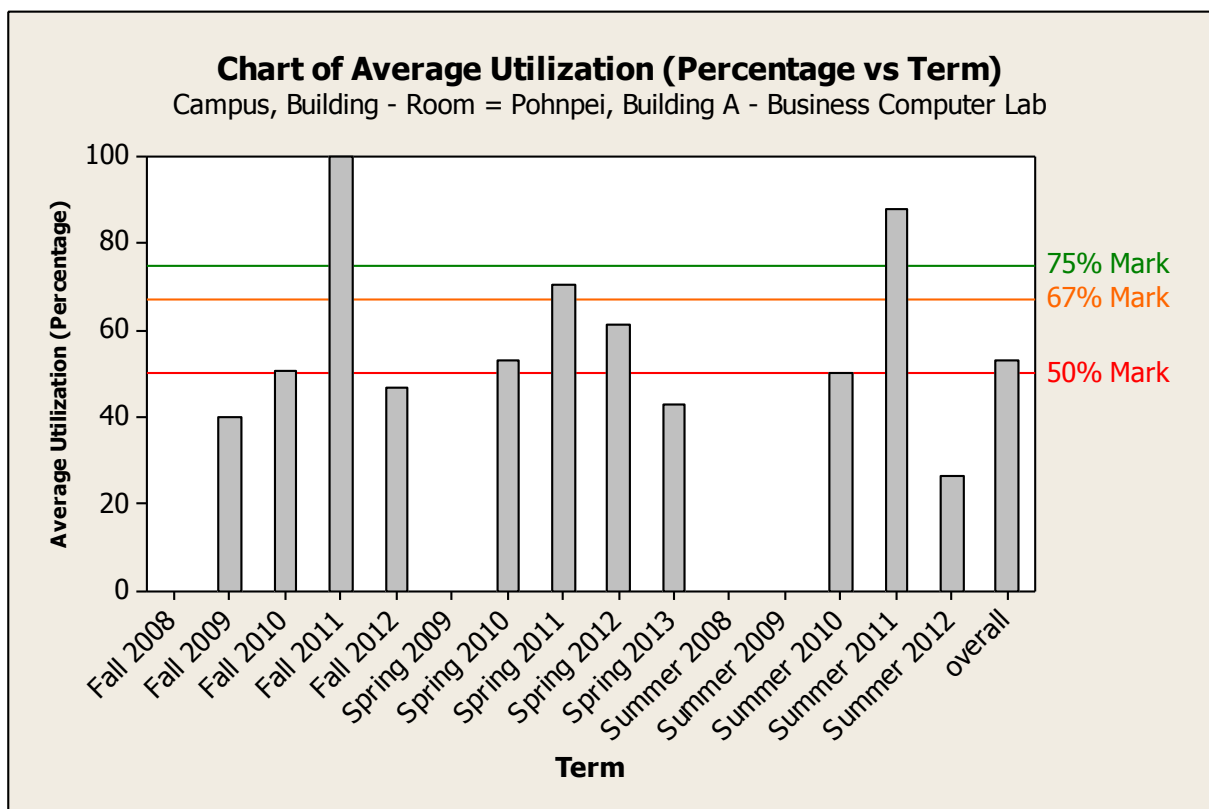
Admin Bldg – Room 12



## Blue Plate Café

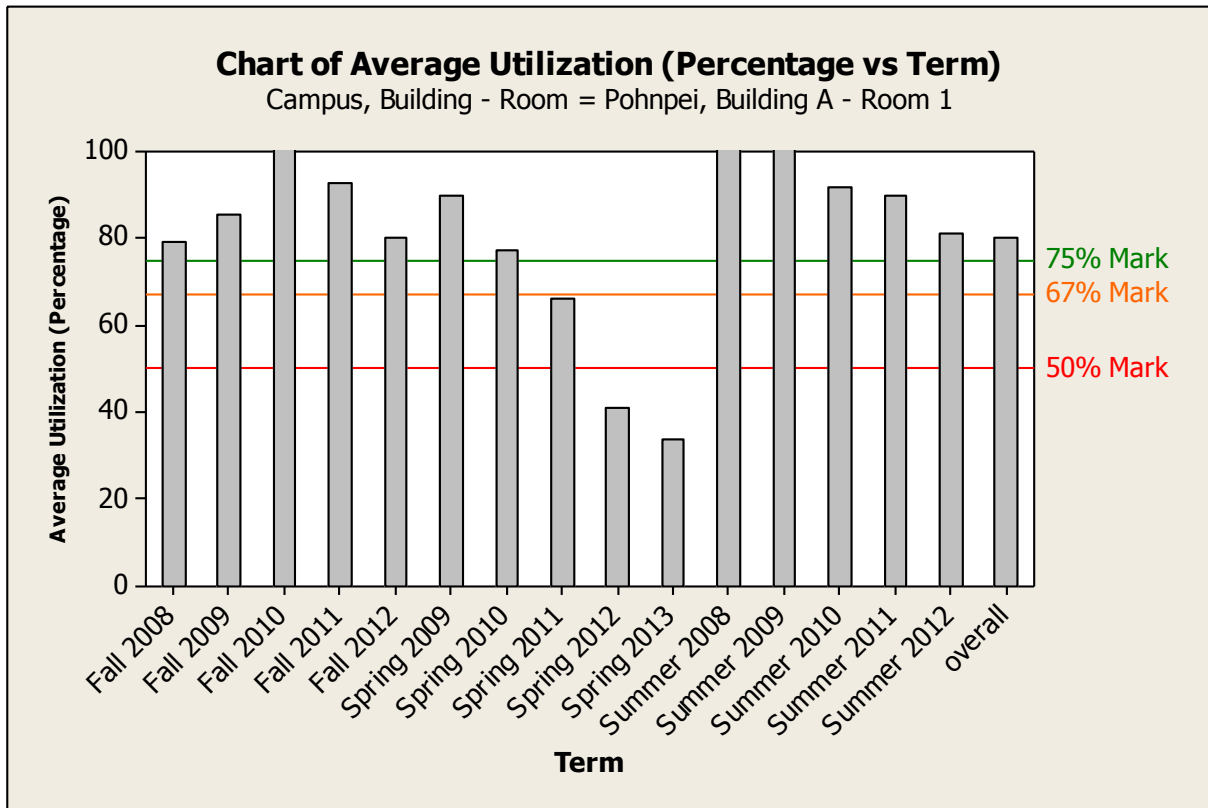


## Building A, Business Computer Lab

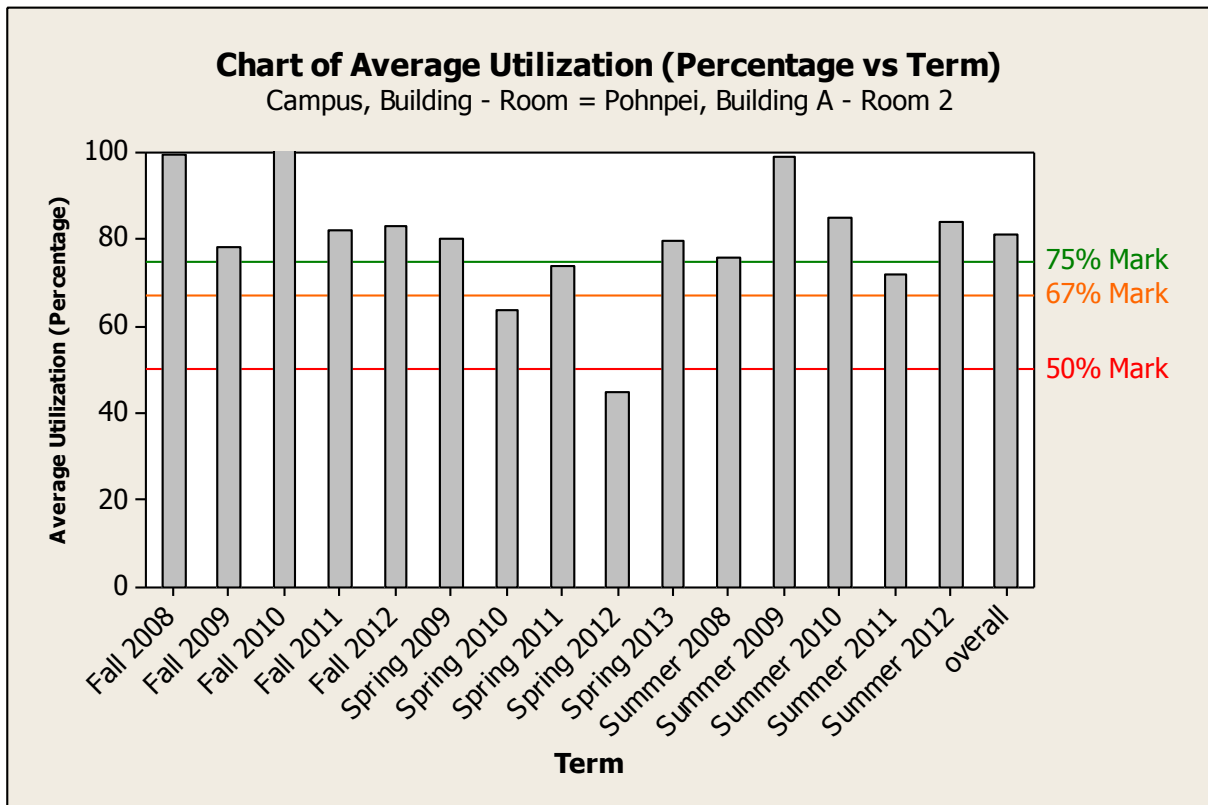




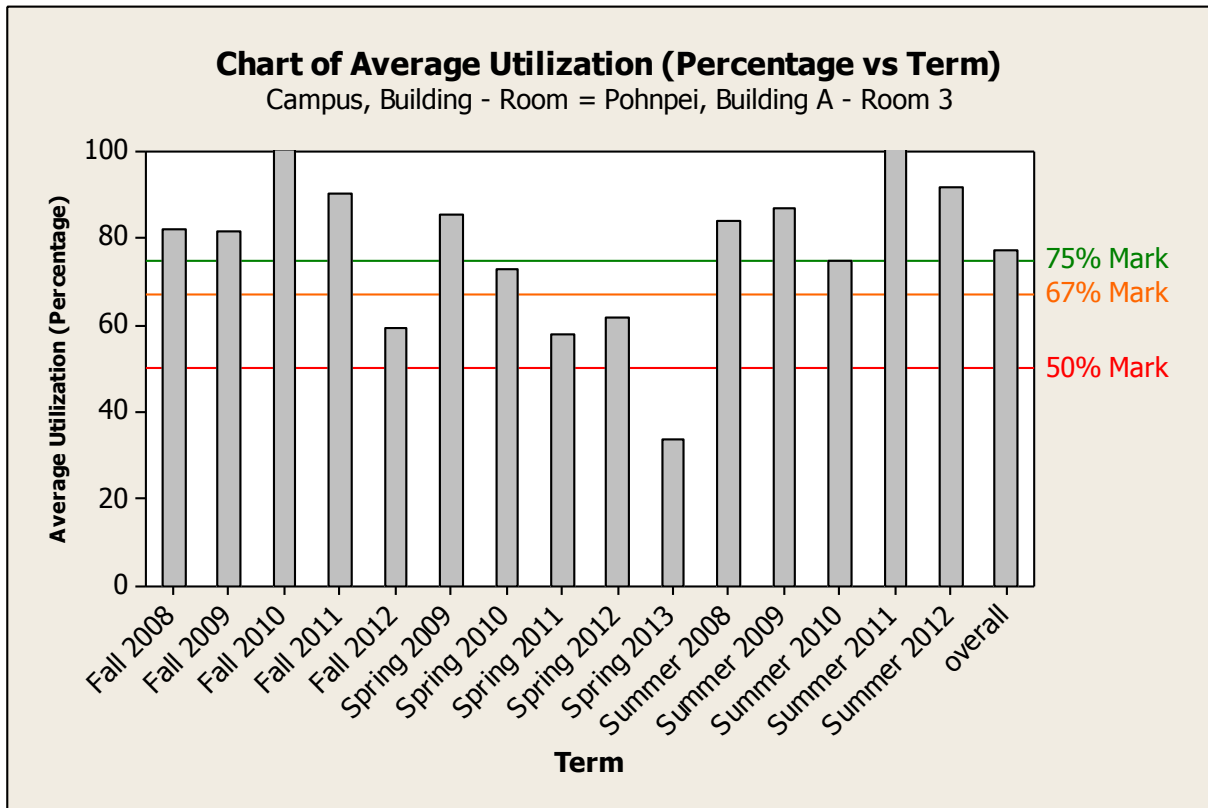
## Building A, Room 1



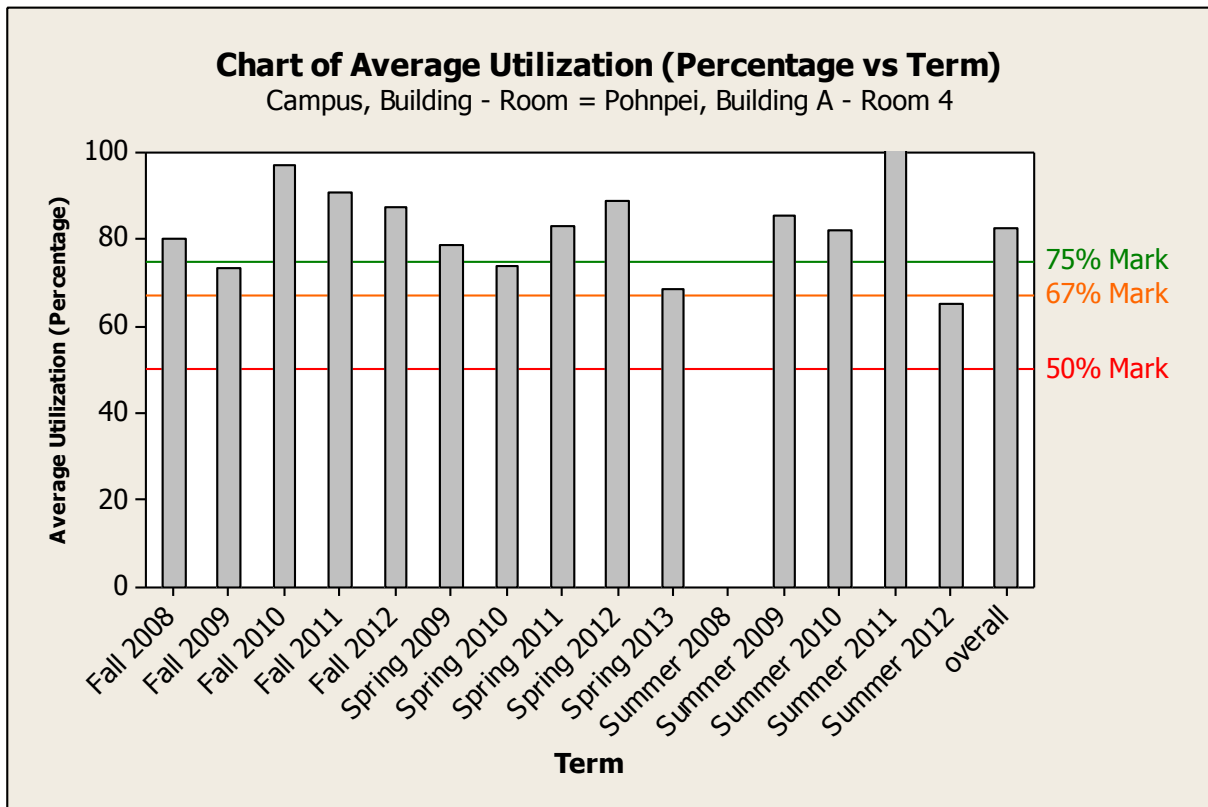
## Building A, Room 2



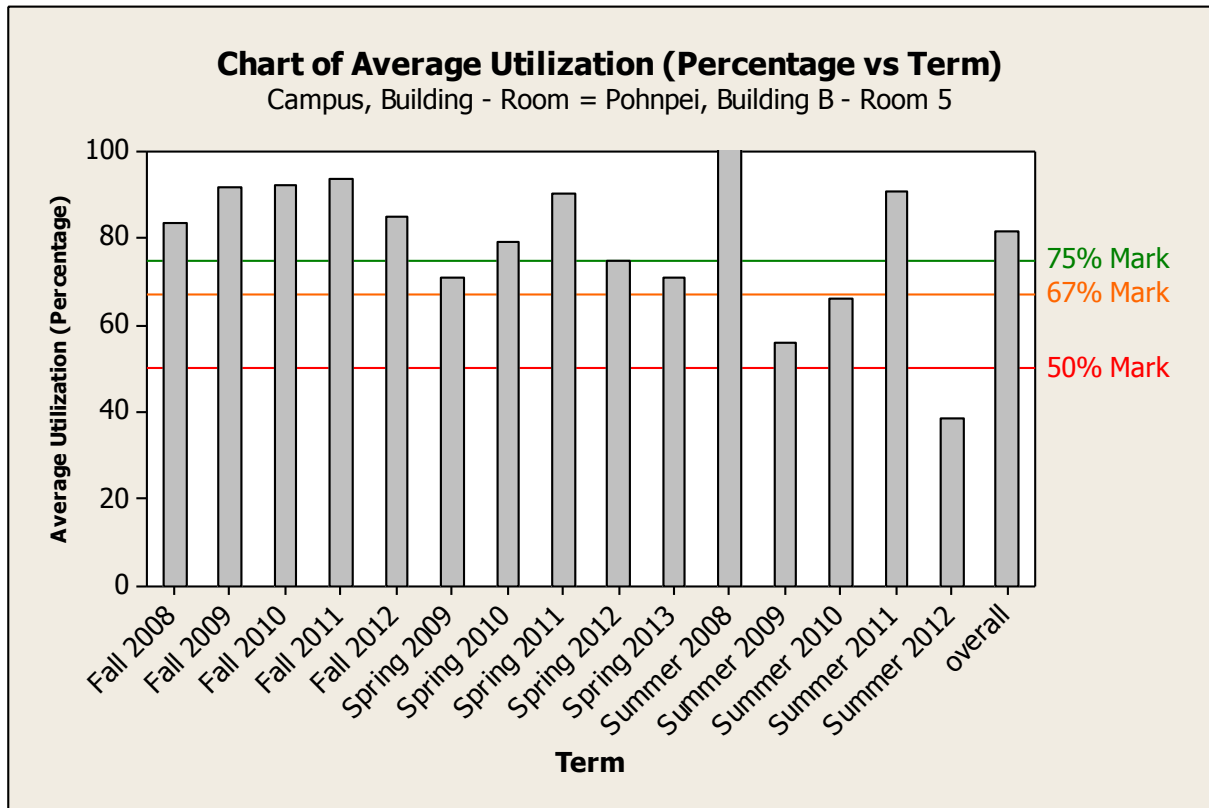
### Building A, Room 3



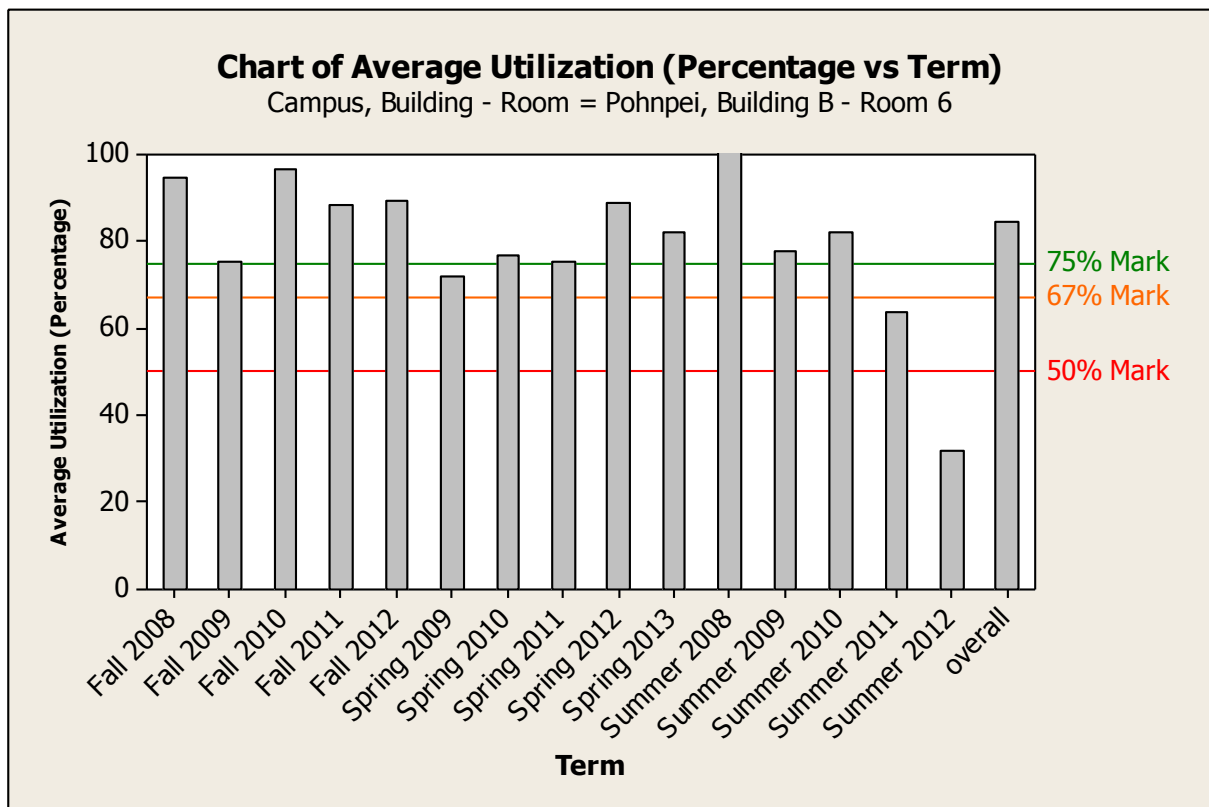
### Building A, Room 4



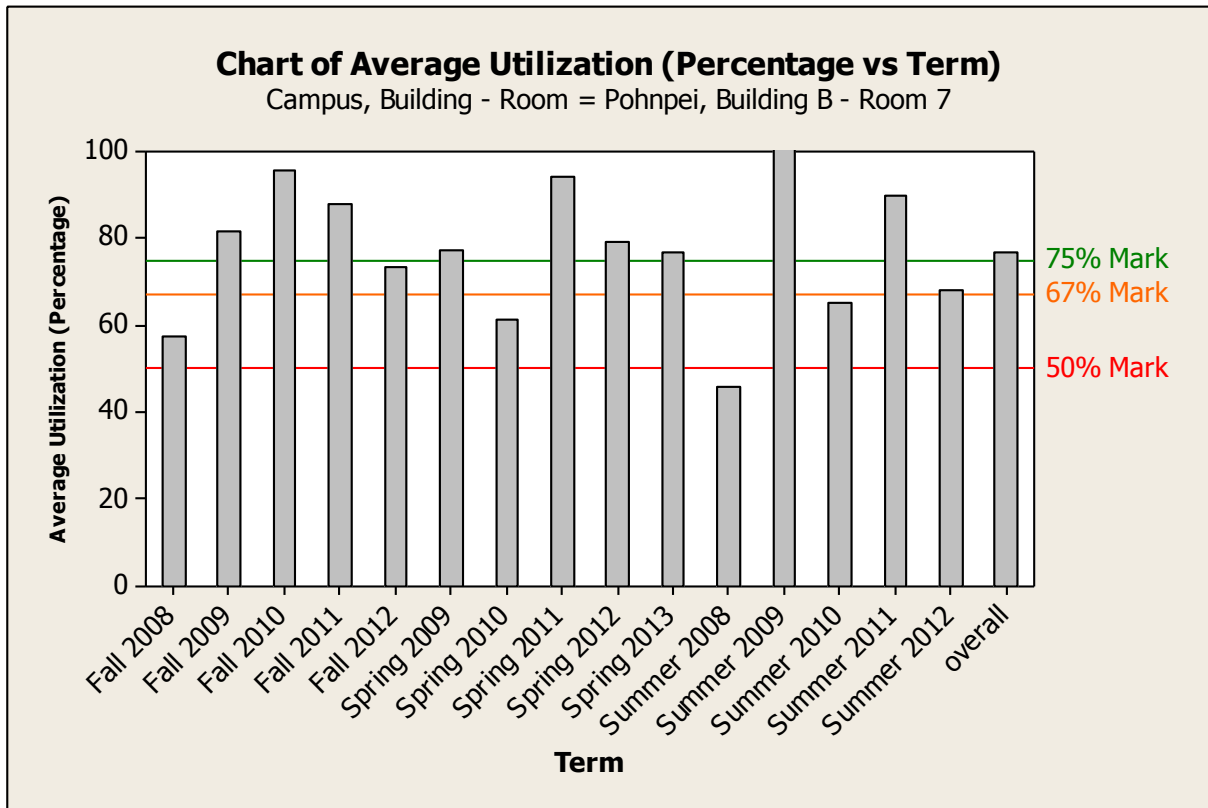
## Building B, Room 5



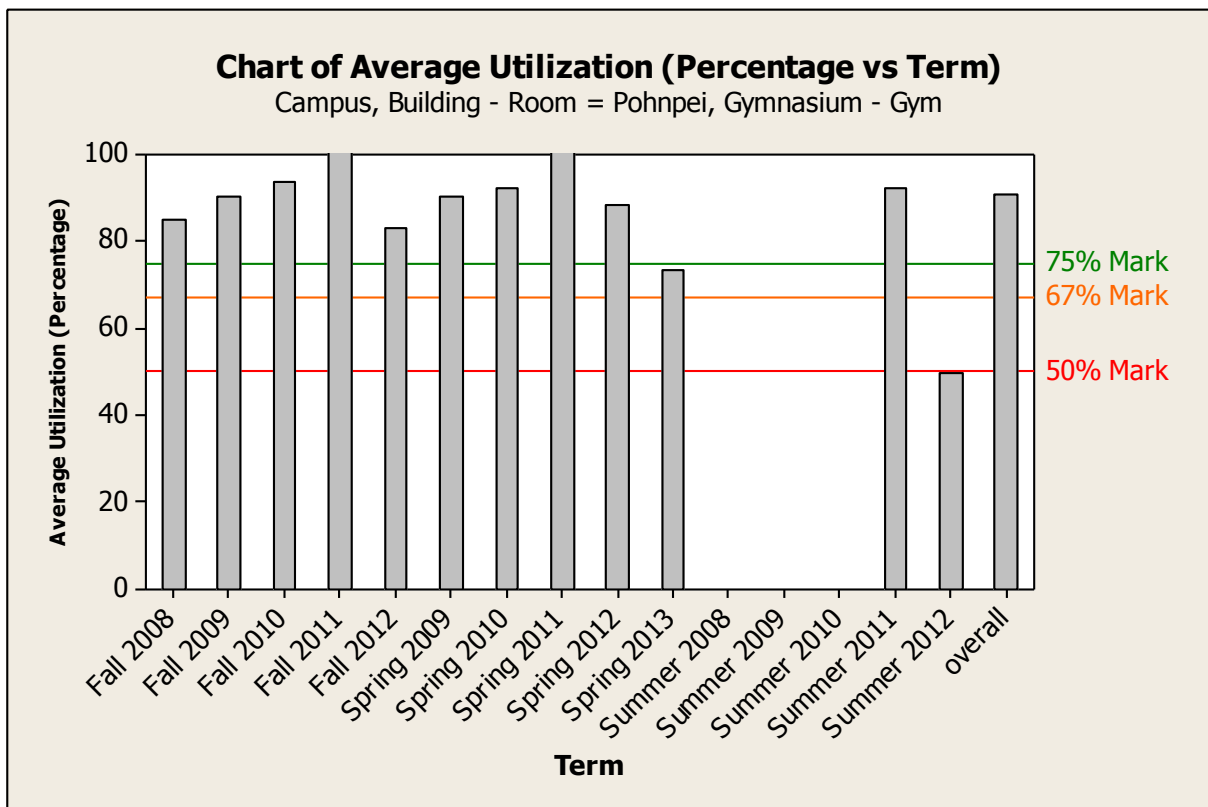
## Building B, Room 6



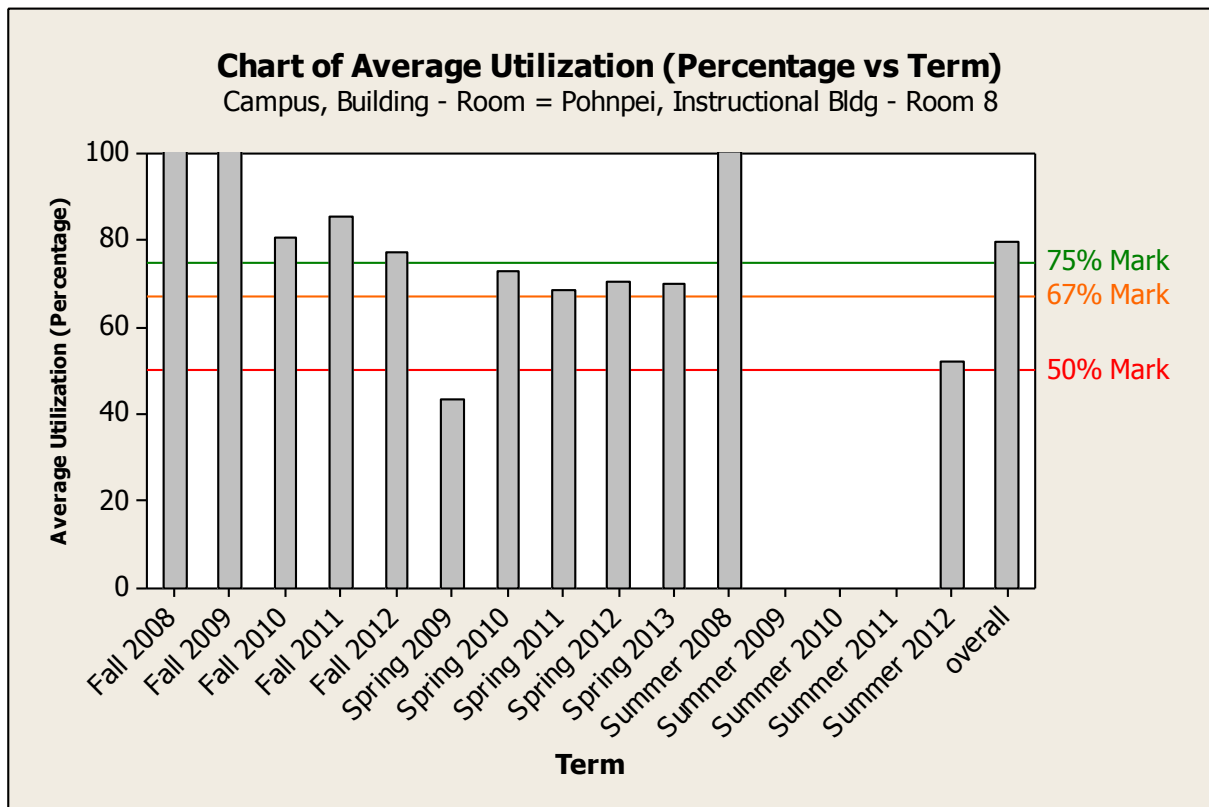
## Building B, Room 7



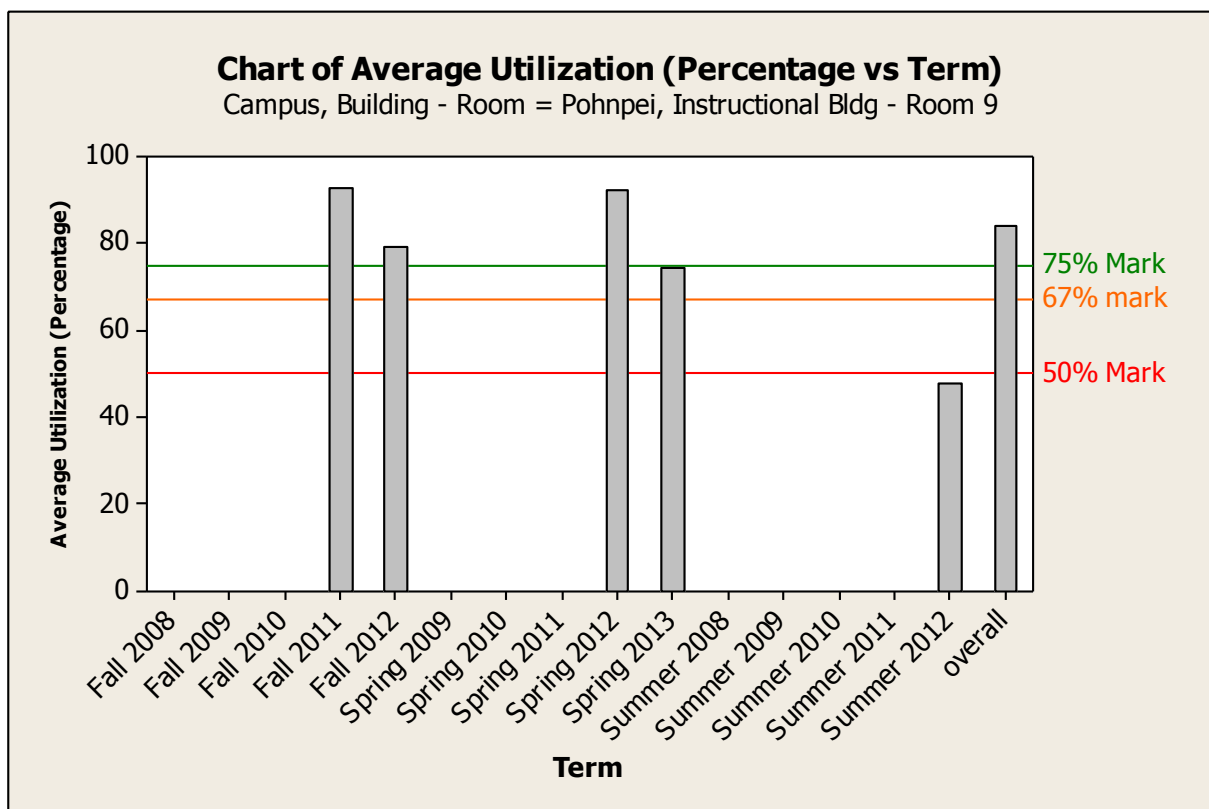
## Gym



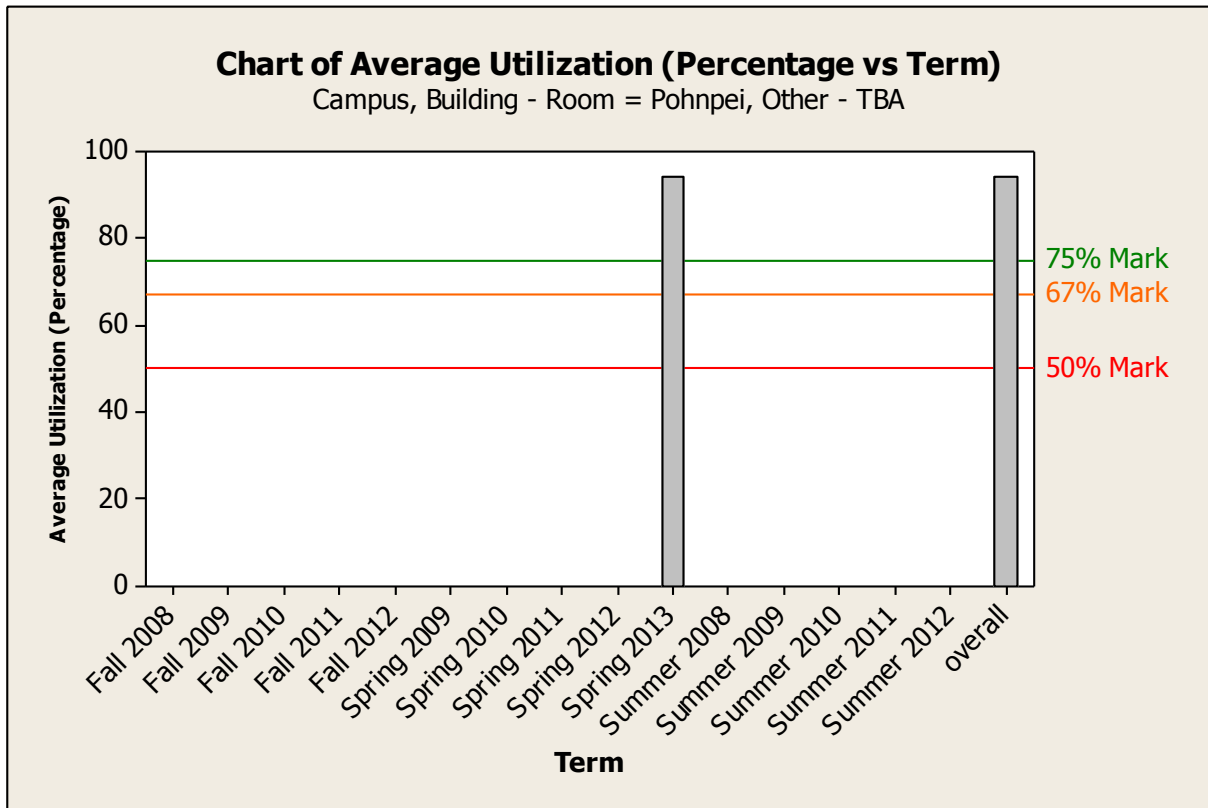
Instructional Building, Room 8



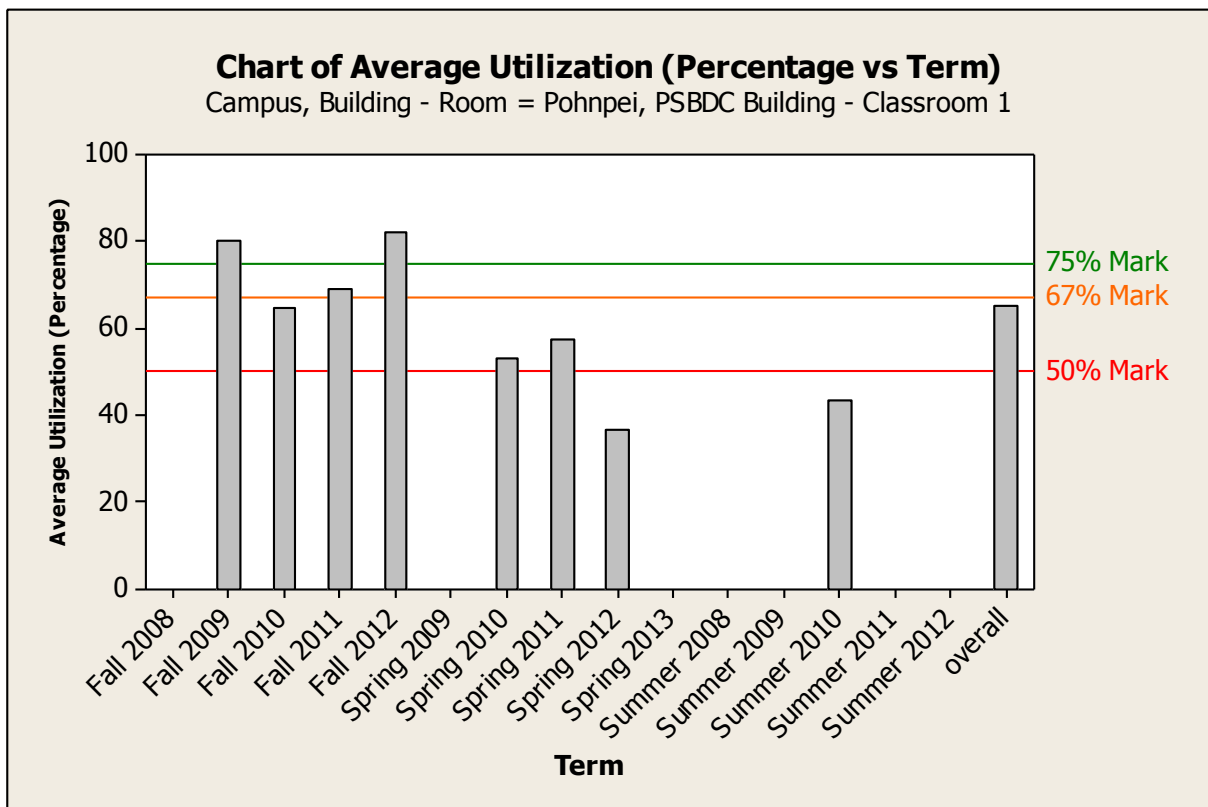
Instructional Building, Room 9



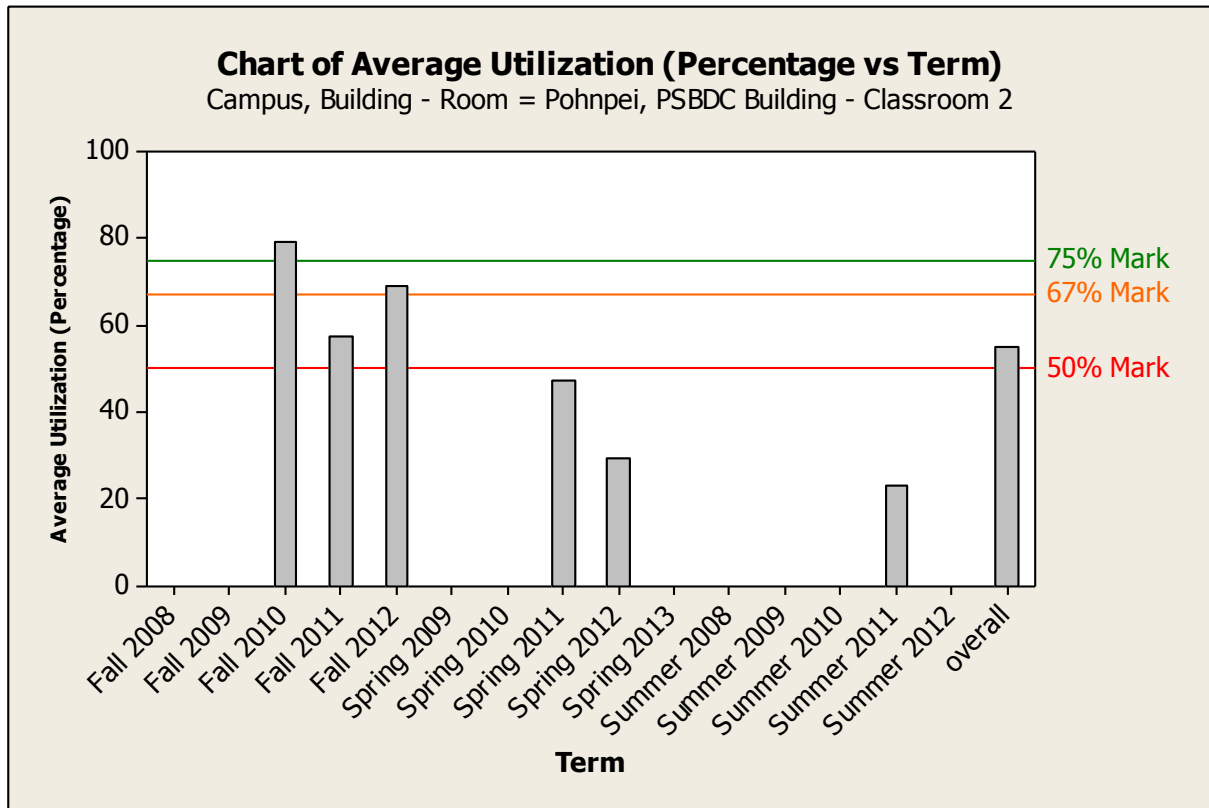
Other, TBA



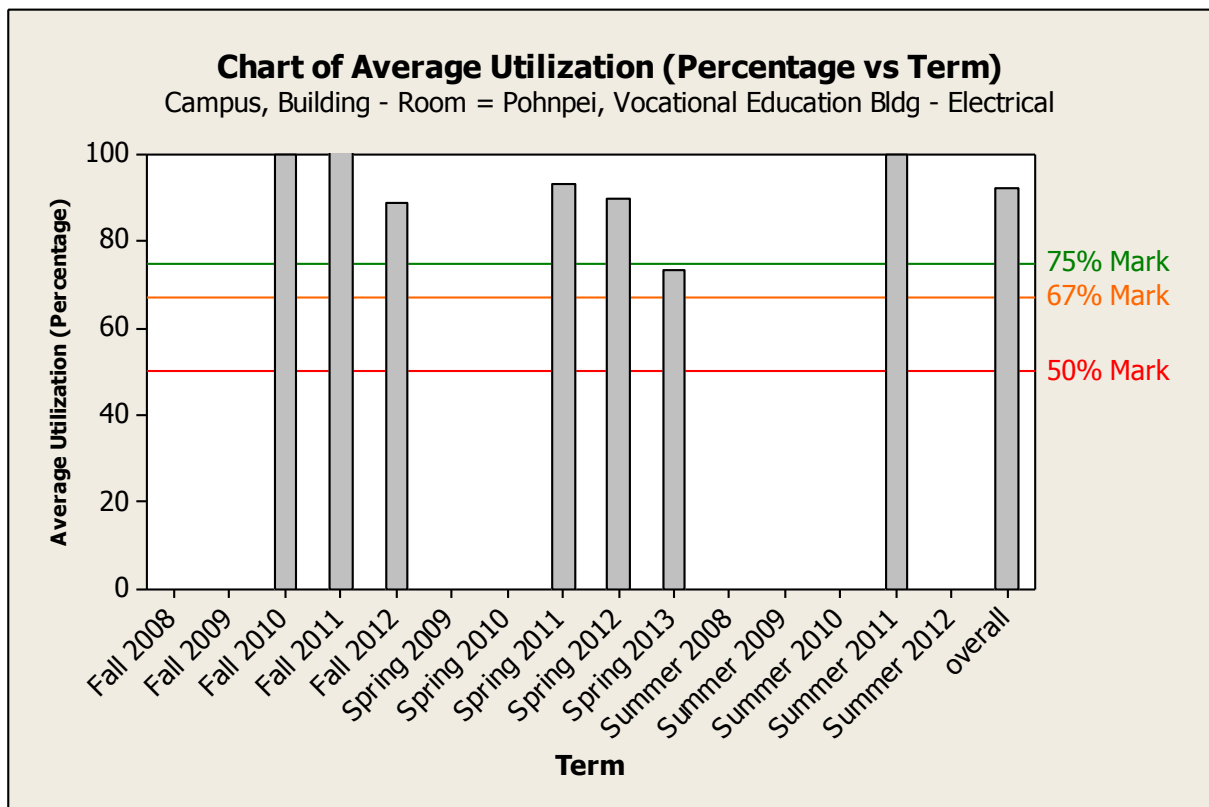
PSBDC Building Classroom 1



PSBDC Building Classroom 2

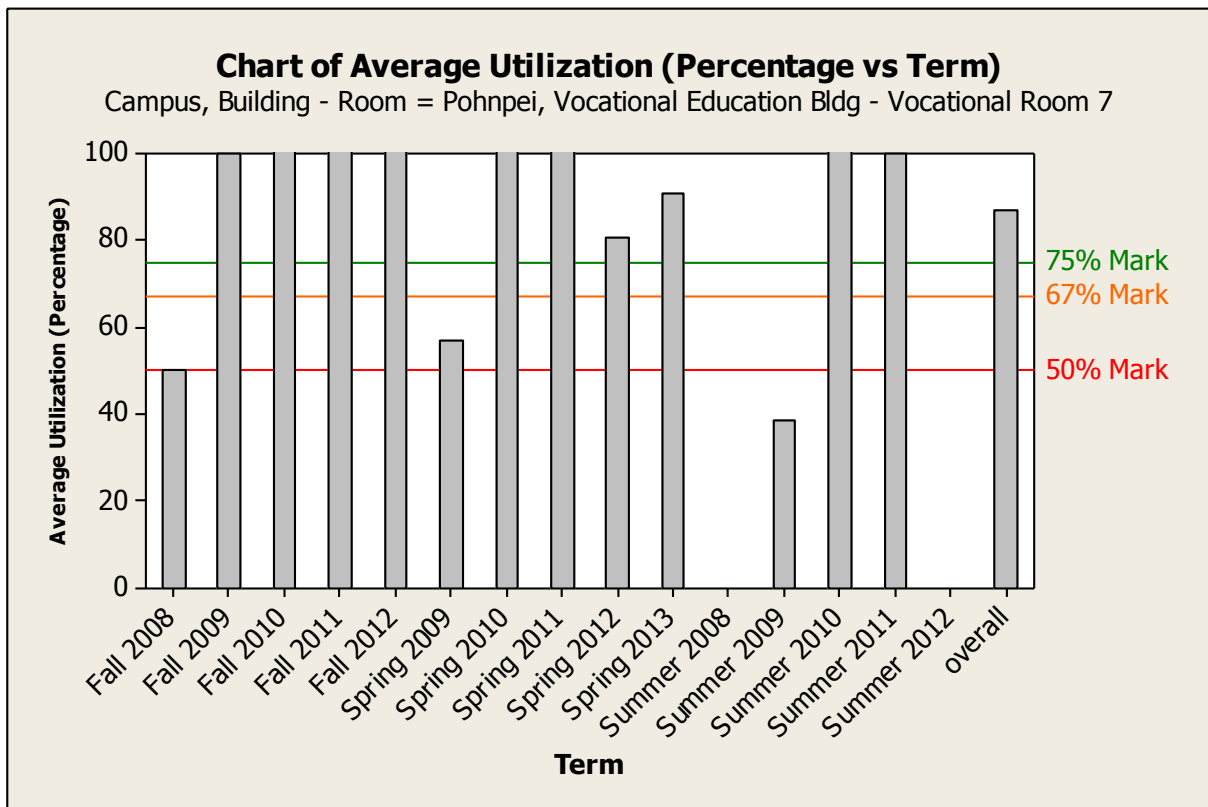


Vocational Education Bldg – Electrical

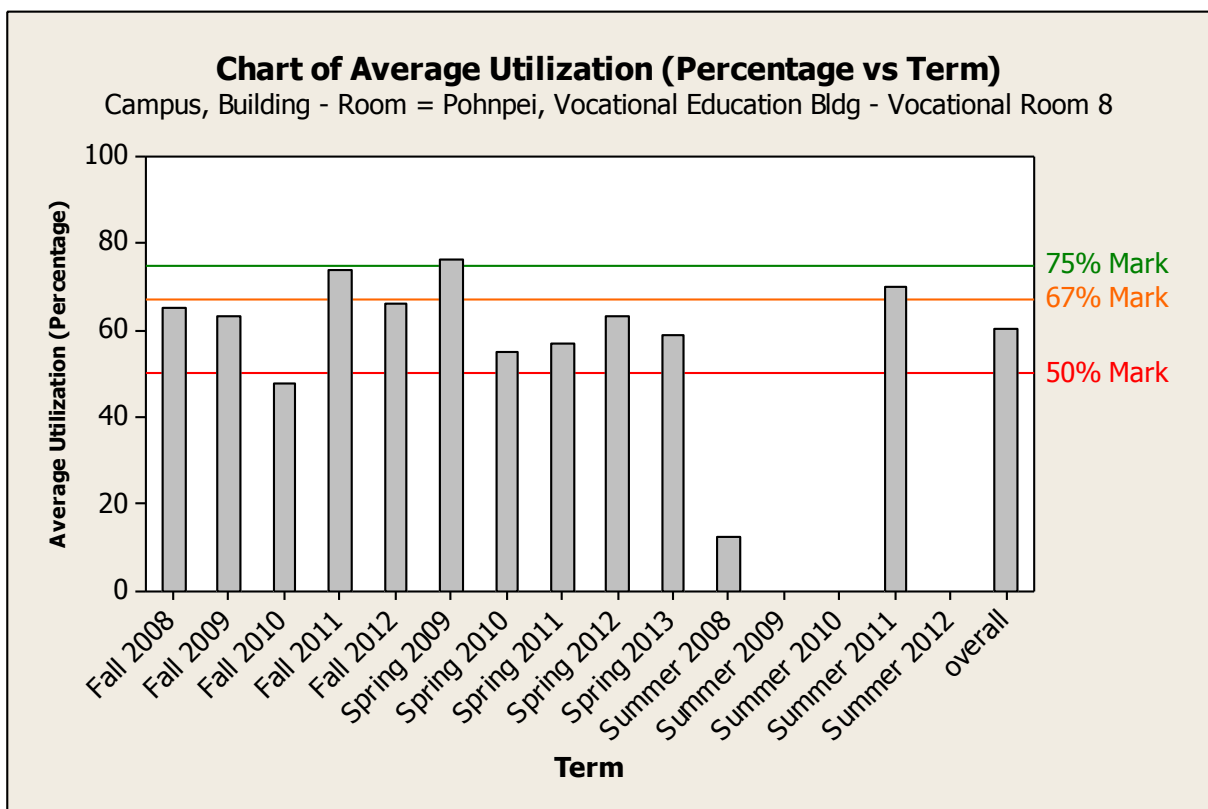




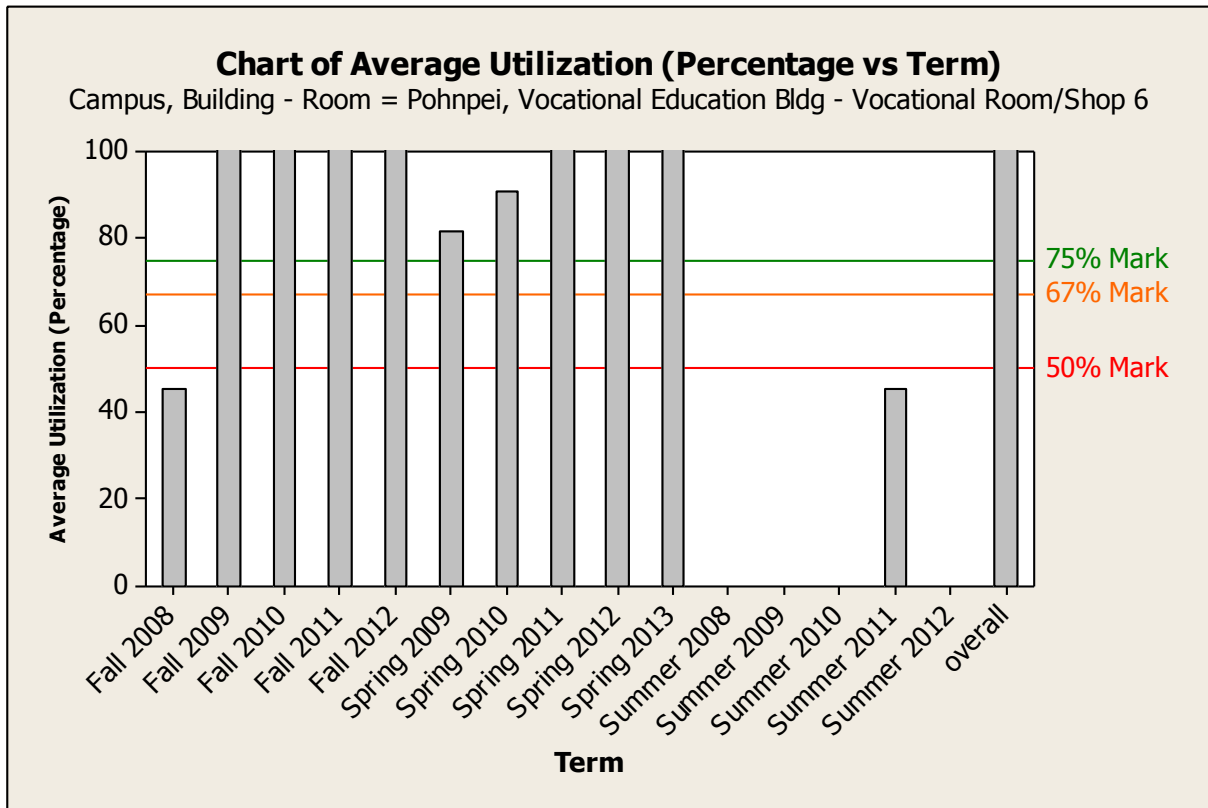
Vocational Education Bldg – Vocational Room 7



Vocational Education Bldg – Vocational Room 8



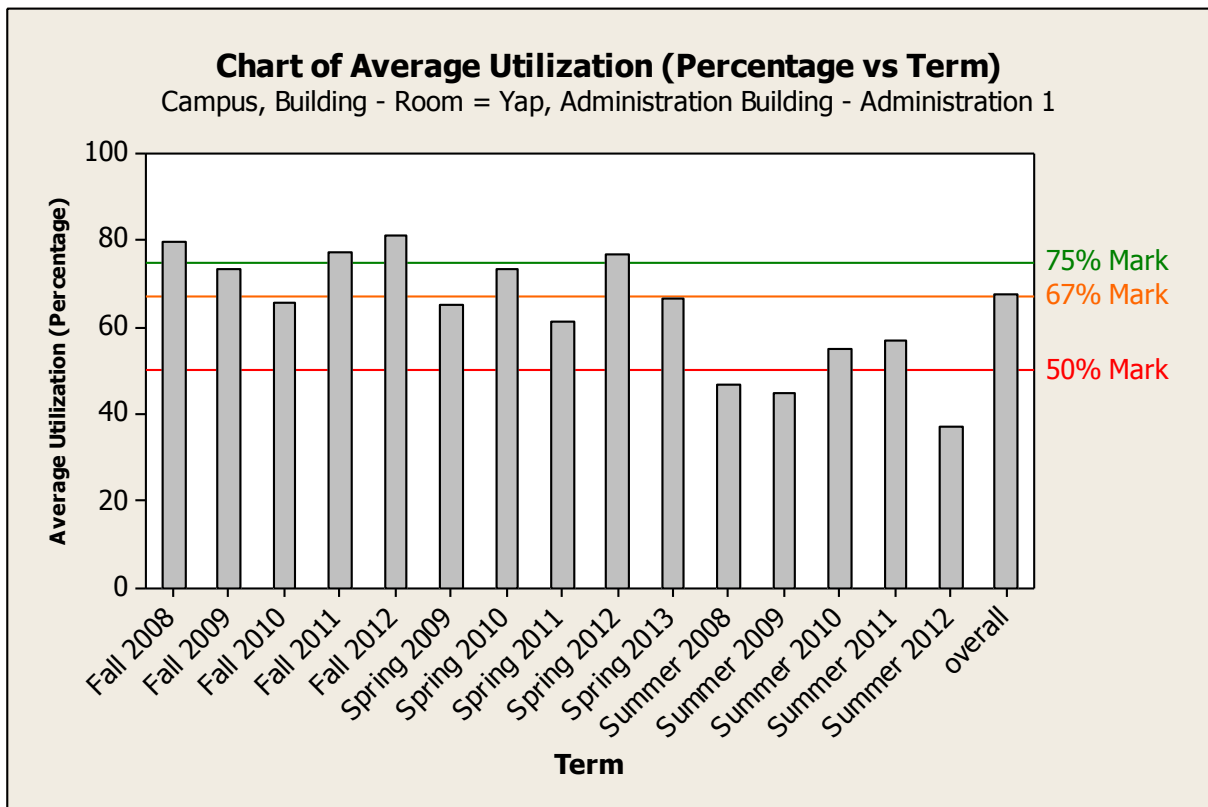
Vocational Education Bldg – Vocational Room/Shop 6



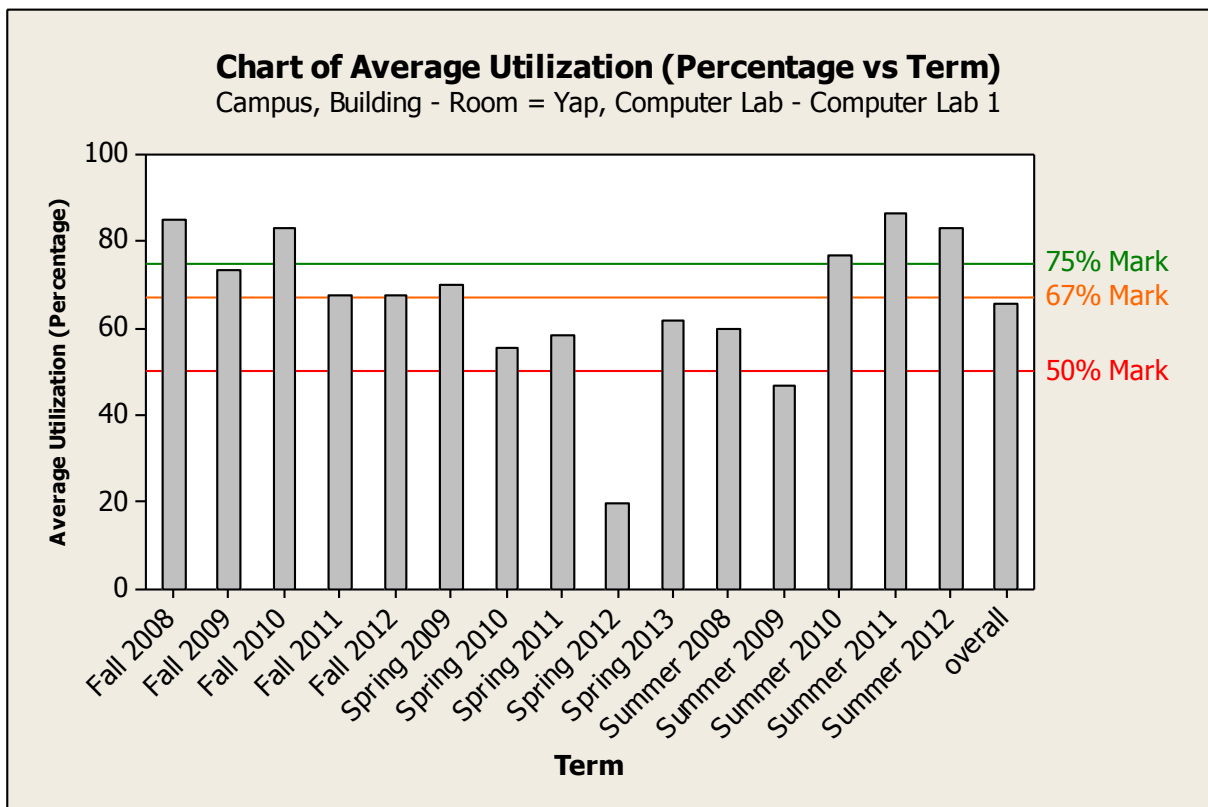
**Yap – 8 rooms**

NOTE: Some rooms had average capacities above 100%, but these have only been shown to be 100% of the graphs.

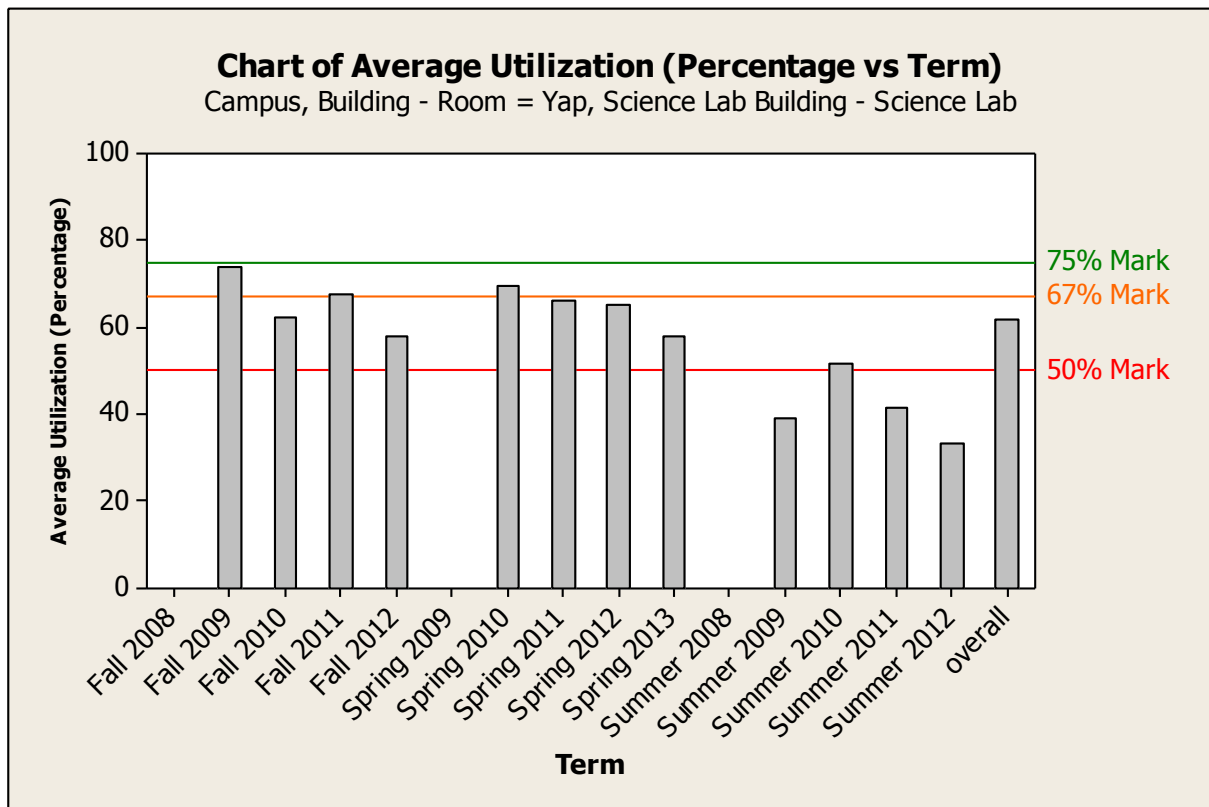
## Administration 1



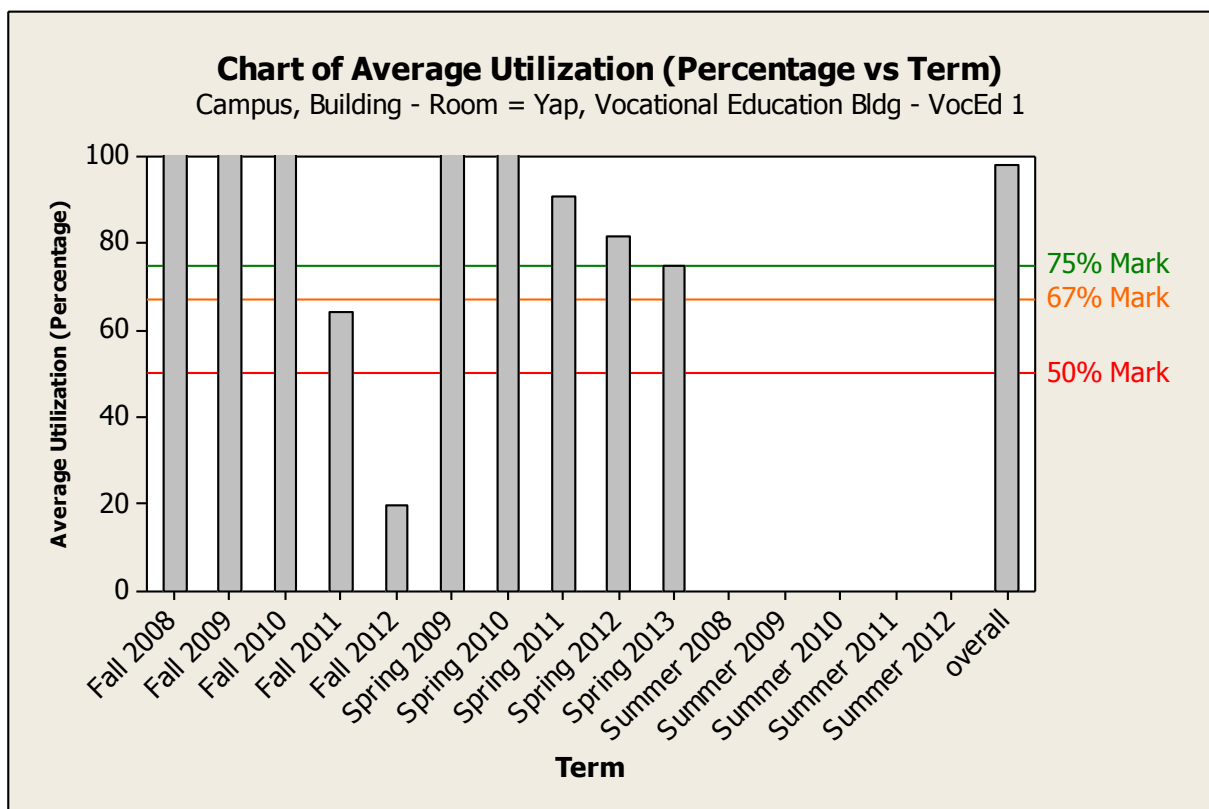
## Computer Lab 1



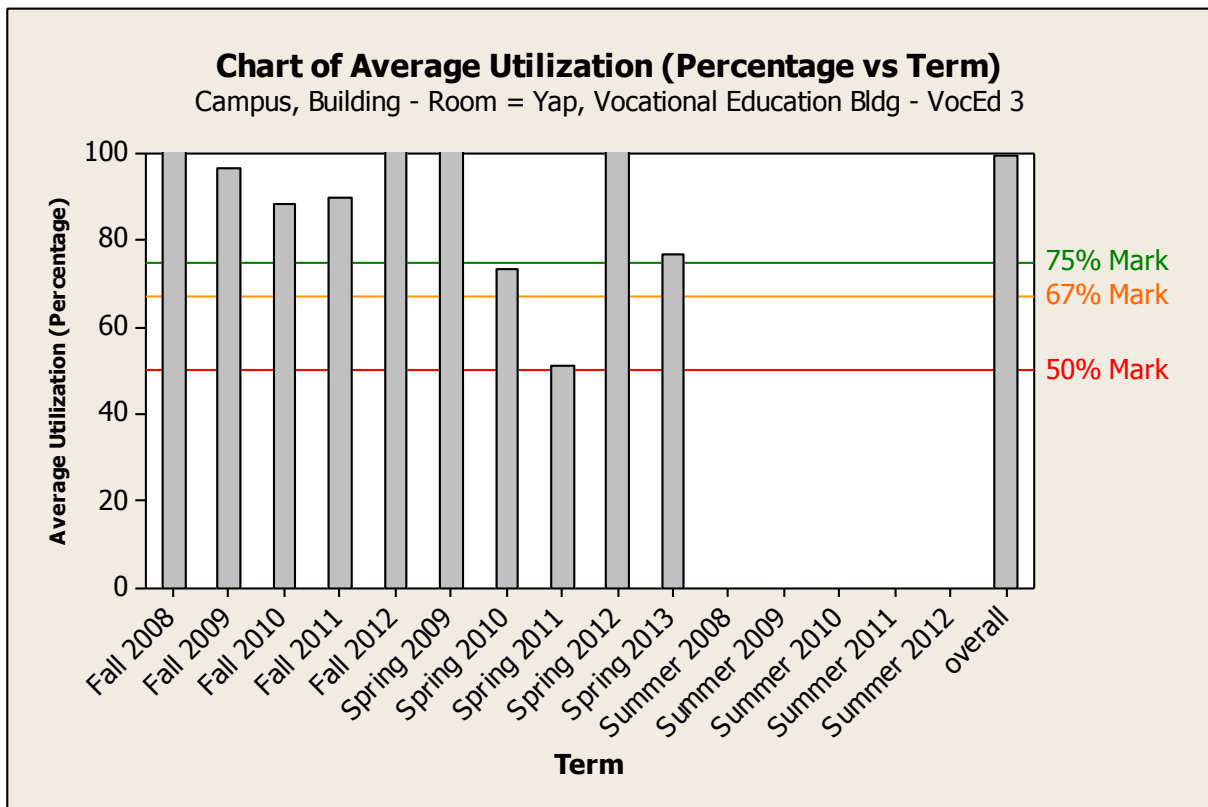
## Science Lab



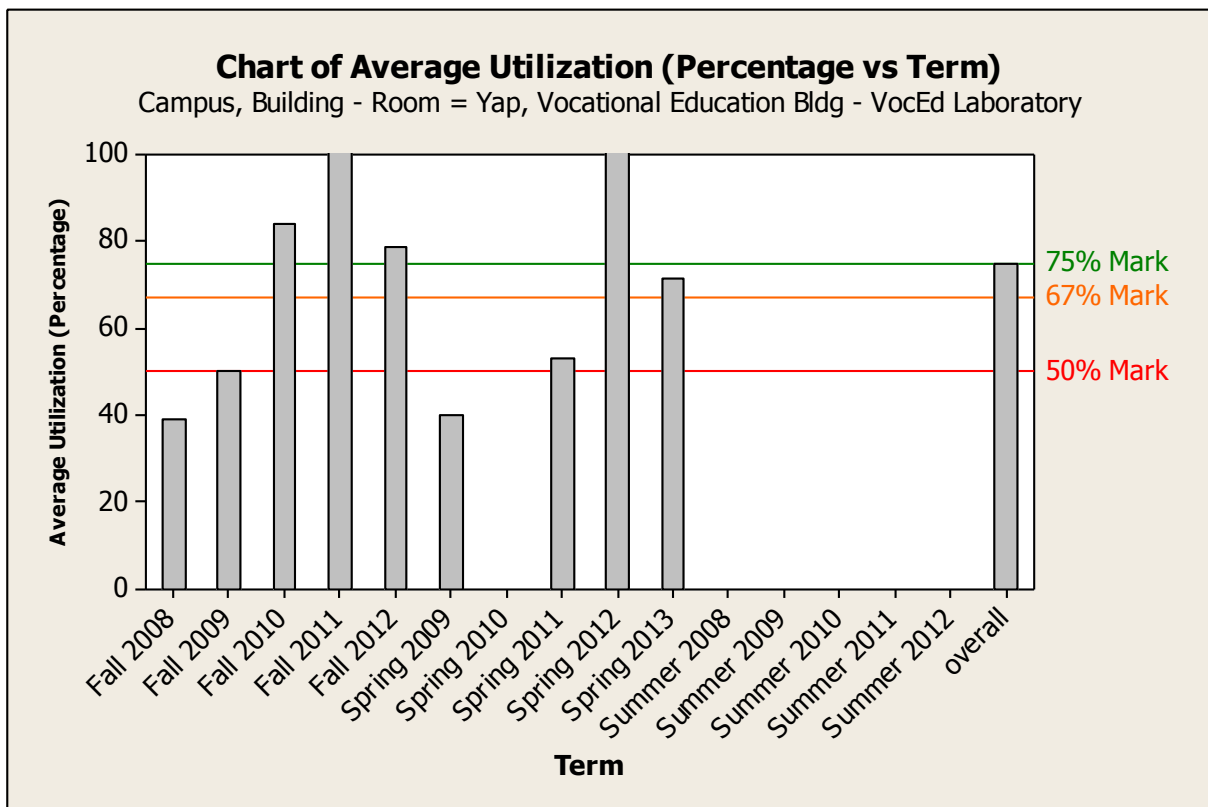
## VocEd 1



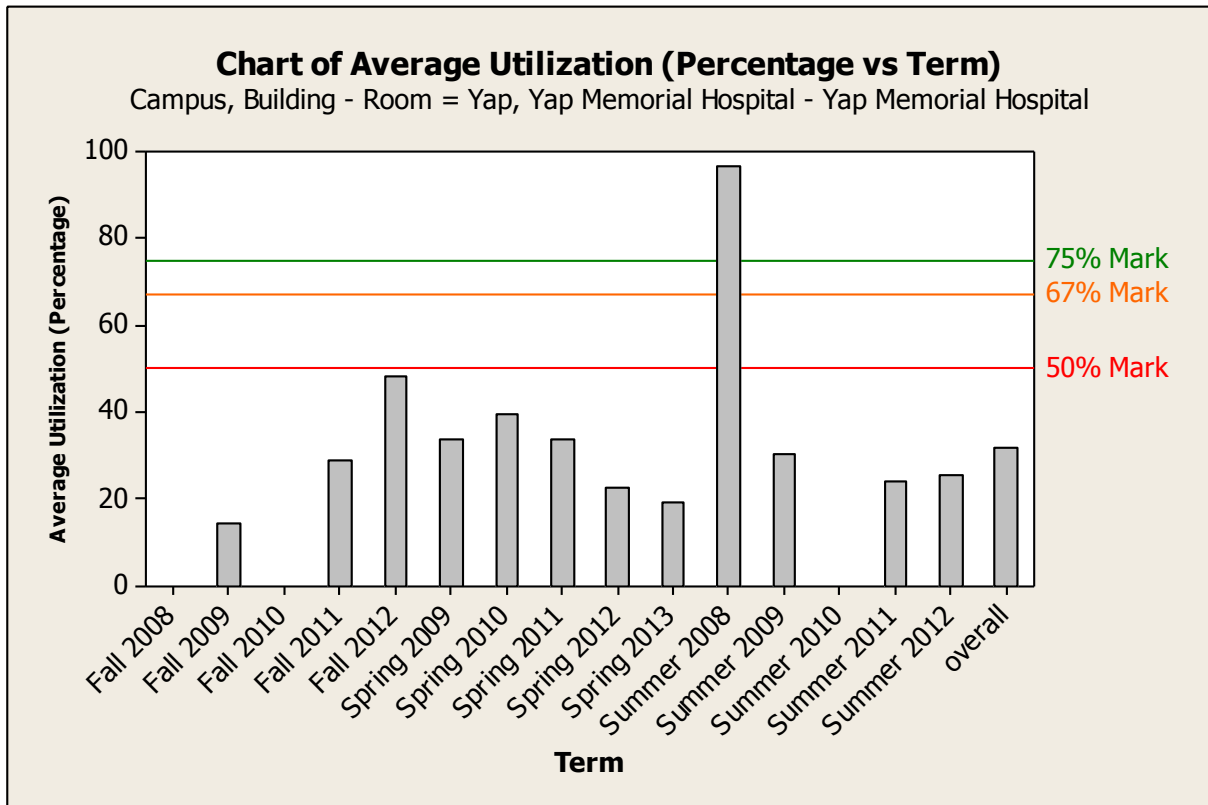
### VocEd3



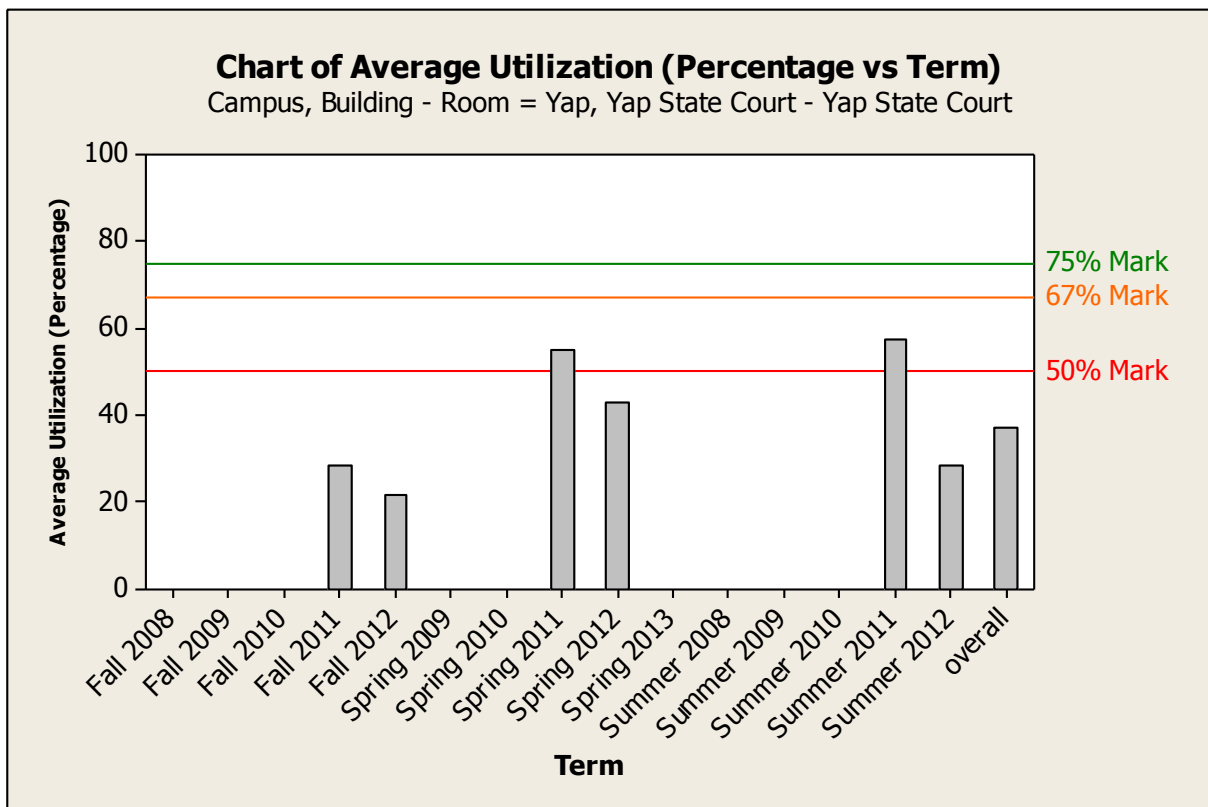
### VocEd Laboratory



## Yap Memorial Hospital



## Yap State Court





## Appendix D

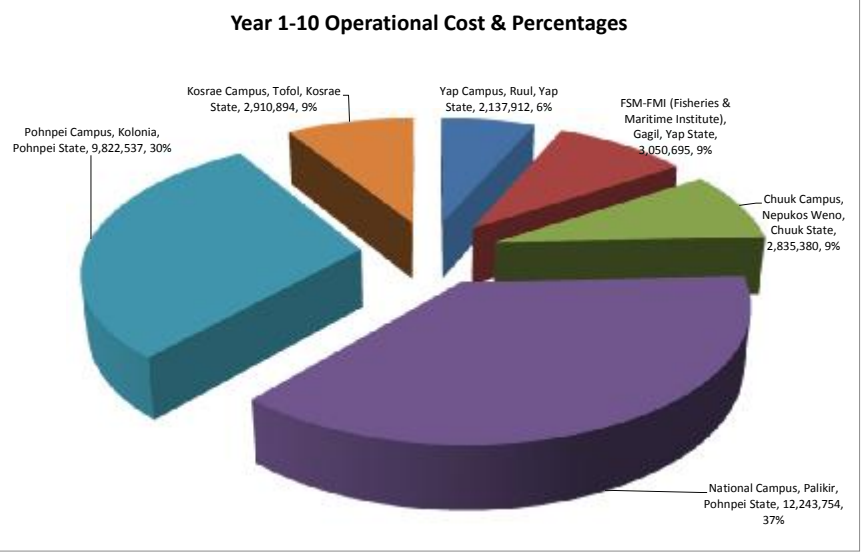
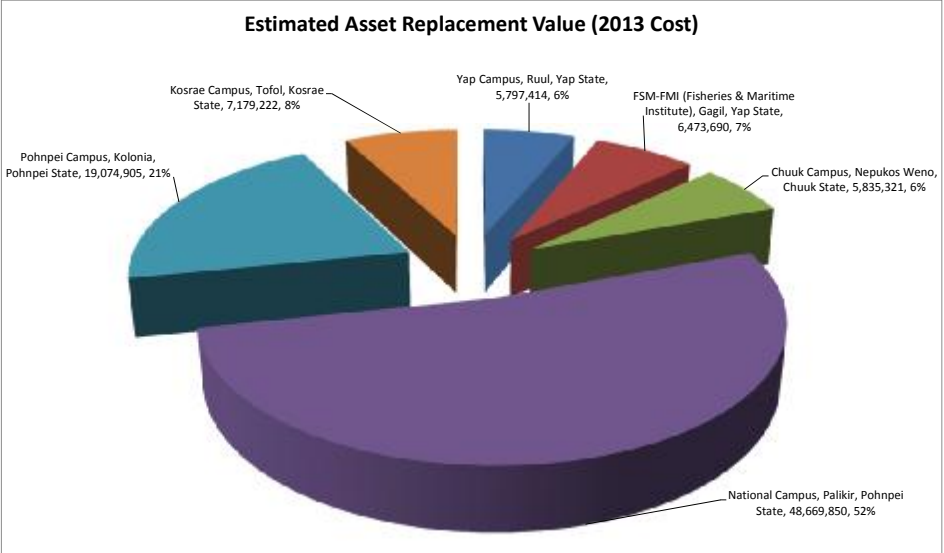
# Indicative Asset Renewal and Maintenance Cost Plan

Click here and  
then click  
'insert picture'



						Year 1 - 10 Asset Renewal Cost vs Full Replacement Cost		Year 11 - 20 Asset Renewal Cost vs Full Replacement Cost		Year 21 - 30 Asset Renewal Cost vs Full Replacement Cost				Operational Cost (Cost of Asset Renewal and Maintenance)						
		Building Area		Site Area		Estimated Full Replacement Cost	Year 1 - 10 Asset Renewal Cost (\$ USD) Excluding Escalation	% of Full Replacement Cost	Year 11 - 20 Asset Renewal Cost (\$ USD) Excluding Escalation	% of Full Replacement Cost	Year 21 - 30 Asset Renewal Cost (\$ USD) Excluding Escalation	% of Full Replacement Cost	Total 30 Year Asset Renewal Cost (\$ USD) Excluding Escalation	% of Full Replacement Cost	Annualised Asset Renewal Cost (Excluding Escalation)	Annualised Maintenance Cost (Excluding Escalation)	Annualised Total Operational Cost (Excluding Escalation)	Total Year 1-10 Operational Cost (\$ USD) Excluding Escalation	Total Year 11-20 Operational Cost (\$ USD) Excluding Escalation	Total Year 21-30 Operational Cost (\$ USD) Excluding Escalation
Ref	Campus	GFA (ft2)	GFA (m2)	Area (ft2)	Area (m2)	Cost (\$ USD) Excluding Escalation														
1.00	Yap Campus, Ruul, Yap State	23,213	2,157	304,923	28,328	5,797,414	735,379	13%	1,151,982	20%	1,803,738	31%	3,691,099	64%	123,037	45,130	168,167	1,186,683	1,603,286	2,255,042
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	22,374	2,079	1,570,317	145,886	6,473,690	1,466,564	23%	2,092,668	32%	1,762,945	27%	5,322,178	82%	177,406	44,942	222,348	1,915,988	2,542,092	2,212,369
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	21,371	1,985	90,407	8,399	5,835,321	1,226,237	21%	1,385,016	24%	1,816,420	31%	4,427,673	76%	147,589	47,673	195,262	1,702,962	1,861,741	2,293,145
4.00	National Campus, Palikir, Pohnpei State	124,691	11,584	3,177,382	295,186	48,669,850	5,107,564	10%	8,929,380	18%	7,233,639	15%	21,270,583	44%	709,019	207,427	916,447	7,181,838	11,003,654	9,307,913
5.00	Pohnpei Campus, Kolonia, Pohnpei State	70,087	6,511	730,617	67,876	19,074,905	4,415,511	23%	3,873,233	20%	5,472,919	29%	13,761,664	72%	458,722	151,580	610,302	5,931,315	5,389,036	6,988,723
6.00	Kosrae Campus, Tofol, Kosrae State	23,401	2,174	410,205	38,109	7,179,222	1,060,048	15%	1,774,836	25%	2,255,503	31%	5,090,387	71%	169,680	57,116	226,796	1,631,210	2,345,998	2,826,665
	TOTALS EXCLUDING ESCALATION	285,138	26,490	6,283,851	583,784	93,030,402	14,011,305	15%	19,207,114	21%	20,345,165	22%	53,563,584	58%	1,785,453	553,869	2,339,322	19,549,997	24,745,807	25,883,857

						Operational Cost (Cost of Asset Renewal and Maintenance)					
Ref	Campus	Year 1 - 10 Asset Renewal Cost (\$ USD) Including Escalation	Year 11 - 20 Asset Renewal Cost (\$ USD) Including Escalation	Year 21 - 30 Asset Renewal Cost (\$ USD) Including Escalation	Total 30 Year Asset Renewal Cost (\$ USD) Including Escalation	Annualised Asset Renewal Cost (Including Escalation)	Annualised Maintenance Cost (Including Escalation)	Annualised Total Operational Cost (Including Escalation)	Total Year 1-10 Operational Cost (\$USD) Including Escalation	Total Year 11-20 Operational Cost (\$USD) Including Escalation	Total Year 21-30 Operational Cost (\$USD) Including Escalation
1.00	Yap Campus, Ruul, Yap State	896,706	1,960,275	4,281,228	7,138,210	237,940	124,121	362,061	2,137,912	3,201,481	5,522,434
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	1,814,659	3,604,267	4,107,705	9,526,631	317,554	123,604	441,158	3,050,695	4,840,302	5,343,741
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	1,524,259	2,383,132	4,280,518	8,187,909	272,930	131,112	404,042	2,835,380	3,694,252	5,591,638
4.00	National Campus, Palikir, Pohnpei State	6,538,952	15,170,425	16,666,453	38,375,831	1,279,194	570,480	1,849,675	12,243,754	20,875,228	22,371,255
5.00	Pohnpei Campus, Kolonia, Pohnpei State	5,653,676	6,472,258	12,546,823	24,672,757	822,425	416,886	1,239,311	9,822,537	10,641,118	16,715,684
6.00	Kosrae Campus, Tofol, Kosrae State	1,340,047	2,986,151	5,352,679	9,678,877	322,629	157,085	479,714	2,910,894	4,556,998	6,923,526
TOTALS INCLUDING ESCALATION		17,768,300	32,576,507	47,235,407	97,580,214	3,252,674	1,523,287	4,775,961	33,001,171	47,809,378	62,468,278





Ref	Building	Cost Period	Sub-Structure	Frame	Structural Walls	Upper Floors	Roof	External Walls & Finishes	Windows & Doors	Structure	Stairs Balus & Handrails	Internal Walls & Partitions	Internal Doors	Floor Finishes	Wall Finishes	Ceiling Finishes	Fixed Joinery Units	Internal Fit-Out	Sanitary Plumbing	Mech. Services	Fire Services	Electrical Services	Vertical Transport	Special Services	Building Services	Building
1.00	Yap Campus, Ruul, Yap State	Year 1 - 10 Asset Renewal Cost (\$ USD)	75,110	94,875	0	0	96,872	91,382	46,516	404,755	0	0	0	54,843	15,097	0	8,640	78,580	2,277	179,946	12,627	0	0	21,775	216,625	699,959
		Year 11 - 20 Asset Renewal Cost (\$ USD)	0	0	0	0	75,608	17,979	4,703	98,290	3,036	0	9,108	99,643	161,133	48,619	52,040	373,578	26,565	244,588	22,414	172,992	0	31,484	498,043	969,912
		Year 21 - 30 Asset Renewal Cost (\$ USD)	44,134	0	23,920	50,600	266,180	27,541	126,095	538,470	27,514	0	23,023	128,411	51,926	247,182	104,810	582,866	140,289	245,094	11,545	0	0	21,775	418,702	1,540,038
		Total (\$ USD)	119,244	94,875	23,920	50,600	438,660	136,902	177,313	1,041,515	30,550	0	32,131	282,897	228,155	295,801	165,490	1,035,024	169,131	669,628	46,586	172,992	0	75,033	1,133,370	3,209,909
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	Year 1 - 10 Asset Renewal Cost (\$ USD)	0	0	49,386	0	428,131	8,197	0	485,714	0	0	0	202,386	106,120	0	48,450	356,956	115,748	169,510	36,366	0	0	92,660	414,284	1,256,954
		Year 11 - 20 Asset Renewal Cost (\$ USD)	0	0	0	0	16,666	0	103,087	119,754	0	0	3,036	0	120,972	107,737	219,478	451,222	20,556	106,260	6,189	468,476	0	0	601,481	1,172,457
		Year 21 - 30 Asset Renewal Cost (\$ USD)	0	12,150	0	0	360,022	34,286	478,613	885,070	0	0	107,778	164,227	50,151	66,927	7,084	396,167	11,259	160,655	36,366	22,770	0	92,660	323,710	1,604,947
		Total (\$ USD)	0	12,150	49,386	0	804,820	42,483	581,700	1,490,538	0	0	110,814	366,613	277,242	174,664	275,011	1,204,345	147,562	436,425	78,922	491,246	0	185,319	1,339,474	4,034,357
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	Year 1 - 10 Asset Renewal Cost (\$ USD)	0	12,650	61,763	0	166,477	33,906	26,945	301,740	0	0	0	143,764	145,408	31,888	0	321,060	12,018	213,406	18,975	36,294	0	48,177	328,869	951,669
		Year 11 - 20 Asset Renewal Cost (\$ USD)	0	0	21,233	0	298,747	47,888	48,804	416,672	0	0	0	22,012	83,051	137,522	10,737	253,322	68,943	202,147	18,975	287,419	0	24,258	601,741	1,271,735
		Year 21 - 30 Asset Renewal Cost (\$ USD)	48,699	27,618	40,020	0	135,875	53,358	264,569	570,138	0	0	61,896	161,282	221,390	101,179	36,466	582,213	20,620	173,558	9,488	122,039	0	48,177	373,882	1,526,233
		Total (\$ USD)	48,699	40,268	123,015	0	601,099	135,152	340,317	1,288,550	0	0	61,896	327,058	449,849	270,588	47,203	1,156,595	101,580	589,111	47,438	445,752	0	120,612	1,304,492	3,749,637
4.00	National Campus, Palikir, Pohnpei State	Year 1 - 10 Asset Renewal Cost (\$ USD)	0	0	4,910	0	688,329	30,622	620,198	1,344,058	0	2,000	1,500	796,625	753,844	129,040	27,526	1,710,535	8,190	893,506	158,455	11,620	0	221,776	1,293,547	4,348,140
		Year 11 - 20 Asset Renewal Cost (\$ USD)	500	303,337	0	0	995,108	429,189	88,502	1,816,636	0	0	45,540	265,989	724,378	1,214,576	353,175	2,603,659	436,678	1,214,355	103,711	1,699,331	63,250	374,240	3,891,565	8,311,860
		Year 21 - 30 Asset Renewal Cost (\$ USD)	0	0	0	0	382,406	248,004	252,179	882,589	264,853	0	186,107	523,383	488,214	110,831	141,003	1,714,390	287,282	934,320	146,121	354,592	0	213,987	1,936,303	4,533,282
		Total (\$ USD)	500	303,337	4,910	0	2,065,843	707,814	960,879	4,043,283	264,853	2,000	233,147	1,585,997	1,966,436	1,454,447	521,705	6,028,585	732,150	3,042,181	408,287	2,065,543	63,250	810,002	7,121,414	17,193,281
5.00	Pohnpei Campus, Kolonia, Pohnpei State	Year 1 - 10 Asset Renewal Cost (\$ USD)	94,049	672,973	751,600	364,487	464,846	57,868	53,029	2,458,853	0	0	1,645	331,938	645,710	209,401	35,496	1,224,190	54,648	537,941	19,790	4,428	0	79,812	696,619	4,379,662
		Year 11 - 20 Asset Renewal Cost (\$ USD)	1,423	197,639	0	0	330,345	91,594	332,671	953,672	20,000	0	34,914	133,116	354,763	262,317	42,220	847,329	81,846	724,086	87,575	710,909	0	212,258	1,816,673	3,617,674
		Year 21 - 30 Asset Renewal Cost (\$ USD)	202,986	516,099	47,948	12,176	399,380	392,775	165,272	1,736,635	44,946	0	42,188	466,590	328,773	312,403	338,539	1,533,440	195,379	473,426	16,627	633,542	0	79,812	1,398,786	4,668,861
		Total (\$ USD)	298,459	1,386,711	799,548	376,663	1,194,571	542,236	550,972	5,149,160	64,946	0	78,746	931,644	1,329,246	784,122	416,255	3,604,958	331,873	1,735,454	123,992	1,348,878	0	371,882	3,912,078	12,666,197
6.00	Kosrae Campus, Tofol, Kosrae State	Year 1 - 10 Asset Renewal Cost (\$ USD)	33,990	0	16,149	0	110,602	0	17,481	178,222	0	0	10,626	126,695	103,700	103,351	33,206	377,578	13,915	199,997	23,403	0	0	66,477	303,791	859,591
		Year 11 - 20 Asset Renewal Cost (\$ USD)	0	0	0	0	351,720	145,319	21,222	518,261	29,882	0	4,554	48,656	121,673	109,547	8,030	322,341	24,812	300,374	28,932	184,186	0	68,667	606,970	1,447,571
		Year 21 - 30 Asset Renewal Cost (\$ USD)	80,784	101,181	207,400	0	97,988	113,934	162,550	763,837	2,220	10,170	12,144	144,815	128,334	96,718	142,114	536,515	105,944	195,569	11,701	224,136	0	66,477	603,627	1,904,180
		Total (\$ USD)	114,774	101,181	223,549	0	560,309	259,252	201,254	1,460,320	32,102	10,170	27,324	320,167	353,707	309,616	183,350	1,236,435	144,670	695,940	64,035	408,321	0	201,621	1,514,588	4,211,343
Total - Year 1 - 10 Asset Renewal Cost (\$ USD)			203,149	780,498	883,808	364,487	1,955,258	221,974	764,168	5,173,343	0	2,000	13,771	1,656,252	1,769,878	473,680	153,318	4,068,898	206,795	2,194,305	269,615	52,341	0	530,677	3,253,734	12,495,975
Total - Year 11 - 20 Asset Renewal Cost (\$ USD)			1,923	500,977	21,233	0	2,068,194	731,968	598,988	3,923,283	52,918	0	97,152	569,415	1,565,970	1,880,317	685,679	4,851,452	659,399	2,791,810	267,796	3,523,312	63,250	710,906	8,016,473	16,791,208
Total - Year 21 - 30 Asset Renewal Cost (\$ USD)			376,603	657,048	319,287	62,776	1,641,851	869,897	1,449,277	5,376,740	339,533	10,170	433,136	1,588,707	1,268,788	935,241	770,017	5,345,591	760,771	2,182,622	231,849	1,357,079	0	522,888	5,055,210	15,777,540
Grand Total (\$ USD)			581,676	1,938,523	1,224,328	427,263	5,665,303	1,823,839	2,812,434	14,473,366	392,450	12,170	544,059	3,814,375	4,604,635	3,289,238	1,609,014	14,265,941	1,626,965	7,168,738	769,260	4,932,732	63,250	1,764,471	16,325,416	45,064,723



			Roading	Car Parks	Foot Paths & Circulation Areas	Fences & Gates	Structures	Retaining Walls	Site Drainage	Electrical Infrastructure	Water Services	Site Furniture	Total
Ref	Building	Cost Period											
1.00	Yap Campus, Ruul, Yap State	Year 1 - 10 Asset Renewal Cost (\$ USD)	2,530	1,265	0	0	0	0	18,975	0	12,650	0	35,420
		Year 11 - 20 Asset Renewal Cost (\$ USD)	8,892	23,908	0	0	0	0	12,650	130,295	0	6,325	182,070
		Year 21 - 30 Asset Renewal Cost (\$ USD)	1,265	4,375	0	0	44,275	0	117,645	0	96,140	0	263,700
		Total (\$ USD)	12,687	29,548	0	0	44,275	0	149,270	130,295	108,790	6,325	481,190
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	Year 1 - 10 Asset Renewal Cost (\$ USD)	3,036	3,036	0	10,626	170,775	0	18,975	0	3,163	0	209,611
		Year 11 - 20 Asset Renewal Cost (\$ USD)	3,036	3,036	0	0	398,020	0	12,650	490,820	0	12,650	920,212
		Year 21 - 30 Asset Renewal Cost (\$ USD)	1,518	1,518	0	0	0	0	93,610	0	61,353	0	157,999
		Total (\$ USD)	7,590	7,590	0	10,626	568,795	0	125,235	490,820	64,515	12,650	1,287,821
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	Year 1 - 10 Asset Renewal Cost (\$ USD)	2,593	0	0	0	0	0	0	253,000	18,975	0	274,568
		Year 11 - 20 Asset Renewal Cost (\$ USD)	2,593	0	0	0	0	0	0	110,688	0	0	113,281
		Year 21 - 30 Asset Renewal Cost (\$ USD)	1,297	0	51,713	27,415	70,929	0	81,909	0	56,925	0	290,187
		Total (\$ USD)	6,483	0	51,713	27,415	70,929	0	81,909	363,688	75,900	0	678,036
4.00	National Campus, Palikir, Pohnpei State	Year 1 - 10 Asset Renewal Cost (\$ USD)	5,793	0	581	1,518	475,762	0	189,750	74,003	0	12,018	759,424
		Year 11 - 20 Asset Renewal Cost (\$ USD)	342,557	134,994	10,054	0	0	0	0	126,500	0	3,416	617,520
		Year 21 - 30 Asset Renewal Cost (\$ USD)	2,897	318,517	22,704	0	518,618	13,460	262,772	1,437,040	8,223	116,127	2,700,357
		Total (\$ USD)	351,246	453,511	33,339	1,518	994,380	13,460	452,522	1,637,543	8,223	131,560	4,077,302
5.00	Pohnpei Campus, Kolonia, Pohnpei State	Year 1 - 10 Asset Renewal Cost (\$ USD)	14,550	10,453	3,256	0	0	0	6,325	0	0	1,265	35,850
		Year 11 - 20 Asset Renewal Cost (\$ USD)	14,550	7,566	3,256	1,518	58,336	0	6,325	161,288	0	2,720	255,559
		Year 21 - 30 Asset Renewal Cost (\$ USD)	7,275	24,795	147,093	80,541	256,338	166,802	78,648	15,180	6,325	21,062	804,058
		Total (\$ USD)	36,376	42,814	153,605	82,059	314,674	166,802	91,298	176,468	6,325	25,047	1,095,467
6.00	Kosrae Campus, Tofol, Kosrae State	Year 1 - 10 Asset Renewal Cost (\$ USD)	8,631	5,665	0	0	129,237	0	0	56,925	0	0	200,457
		Year 11 - 20 Asset Renewal Cost (\$ USD)	8,631	5,665	0	0	298,738	0	4,744	0	9,488	0	327,264
		Year 21 - 30 Asset Renewal Cost (\$ USD)	4,315	2,832	0	4,918	43,709	15,983	141,174	117,013	0	21,379	351,323
		Total (\$ USD)	21,577	14,161	0	4,918	471,683	15,983	145,918	173,938	9,488	21,379	879,045
		Total - Year 1 - 10 Asset Renewal Cost (\$ USD)	37,134	20,419	3,837	12,144	775,774	0	234,025	383,928	34,788	13,283	1,515,330
		Total - Year 11 - 20 Asset Renewal Cost (\$ USD)	380,260	175,169	13,310	1,518	755,093	0	36,369	1,019,590	9,488	25,110	2,415,906
		Total - Year 21 - 30 Asset Renewal Cost (\$ USD)	18,567	352,037	221,510	112,874	933,868	196,245	775,758	1,569,233	228,965	158,568	4,567,624
		Grand Total (\$ USD)	435,960	547,624	238,658	126,536	2,464,735	196,245	1,046,152	2,972,750	273,240	196,961	8,498,861



Ref	Campus	Building	Sub-Structure	Frame	Structural Walls	Upper Floors	Roof	External Walls & Finishes	Windows & Doors	Structure	Stairs Balus. & Handrails	Internal Walls & Partitions	Internal Doors	Floor Finishes	Wall Finishes	Ceiling Finishes	Fixed Joinery Units	Internal Fit-Out	Sanitary Plumbing	Mech. Services	Fire Services	Electrical Services	Vertical Transport	Special Services	Building Services	Building
1.00	Yap Campus, Ruul, Yap State	A - Administration Building	5	3	3	0	3	5	3	4	3	2	2	4	2	2	3	3	2	3	3	3	0	3	3	3
		B - Computer Lab	3	1	3	0	1	3	3	3	4	3	3	3	3	3	3	3	3	0	3	0	3	0	3	3
		C - Land Grant Research Lab	3	3	3	0	5	4	3	4	3	0	3	3	3	3	3	3	3	3	3	4	3	0	3	4
		D - Science Laboratory	1	1	1	0	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
		E - Student Centre (New)	1	1	1	0	1	0	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	0	1	1
		F - Classroom Building (New)	1	1	1	0	1	0	1	0	1	0	0	1	0	1	1	1	1	1	1	1	1	0	1	1
		G - Vocational Education	3	5	3	3	5	5	5	5	3	3	4	5	4	4	3	4	0	3	0	4	0	3	4	4
		H - Student Open Lounge	3	3	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	2
		I - Restroom Facility	4	1	3	0	1	0	4	3	0	0	3	3	3	3	3	3	3	4	0	0	0	3	0	4
		J - Restroom Facility	4	1	3	0	1	0	4	3	0	0	3	3	3	3	3	3	3	4	0	0	0	3	0	4
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	A - Administration/Student Services, Residence & Mess Hall	3	3	3	0	4	0	4	4	0	0	3	5	5	3	3	4	4	1	3	3	0	3	3	4
		B - Staff Housing	3	3	3	0	4	3	4	4	0	3	3	3	5	4	3	3	4	4	4	5	3	0	3	4
		C - Classrooms, Library & Shops	3	3	4	2	4	0	3	4	2	3	3	3	4	4	3	3	4	3	2	0	3	0	3	3
		D - Maintenance	3	3	0	0	4	4	3	4	0	3	3	3	0	3	3	3	3	3	4	0	3	0	3	4
		E - Shower House	3	3	3	0	3	3	0	3	0	0	4	4	4	0	0	4	3	0	0	3	0	0	3	4
		F - Security Post	3	3	3	0	5	0	4	4	0	0	0	0	5	0	3	4	4	0	0	0	3	0	3	4
		A - Faculty Office (A - Admin/Faculty Office)	2	2	2	0	3	2	3	3	0	2	3	3	3	3	3	2	3	2	3	1	1	0	3	3
		B - Classroom (B - Classroom Building B)	2	2	2	0	3	3	3	3	0	2	0	2	2	2	3	1	2	3	3	1	3	0	2	3
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	C - MITC & Classroom (C - Classroom Building C)	2	2	2	0	3	3	2	3	0	2	2	3	3	3	2	3	0	3	1	2	0	2	3	3
		D - Computer Lab (I - Computer Lab)	2	2	2	0	3	2	3	3	0	2	3	3	2	2	2	2	3	0	4	2	3	0	3	3
		E - Library Building (K - Learning Resources Centre)	2	2	2	0	3	2	3	3	0	2	3	3	3	2	2	1	2	0	3	1	3	0	2	3
		F - Counselling Center (F - CRE Building)	2	3	2	0	2	2	3	3	0	3	3	4	3	3	3	3	3	3	4	2	3	0	3	3
		G - Research Lab (J - Student Centre)	2	3	2	0	3	4	3	3	0	2	3	4	3	4	2	3	4	1	3	4	1	3	0	3
		H - Student Support Services (H - Student Services Building)	3	4	4	0	4	4	3	4	0	3	3	4	4	3	3	4	0	4	1	3	0	0	3	4
		I - Directors Office (D - Campus Deans Office)	3	3	4	0	5	3	3	4	0	3	3	5	3	3	1	4	5	3	1	3	0	4	4	
		J - Restroom Facility (E - Restroom Facility)	2	2	2	0	3	3	2	3	0	2	3	3	3	3	3	3	3	3	0	0	0	0	0	2
		M - Midtown (Off Campus)	4	0	5	0	5	5	5	5	0	0	0	4	5	5	0	5	0	5	0	5	0	0	0	5
		4.00	National Campus, Palikir, Pohnpei State	A - Classroom	3	2	2	2	3	3	3	3	3	3	3	4	3	3	3	3	4	3	4	3	3	0
B - Classroom	3			2	3	3	3	2	3	3	3	3	3	4	3	3	3	4	3	4	3	3	0	3	3	
C - Cafeteria	2			2	2	0	3	2	3	3	0	2	3	4	2	3	3	3	3	4	3	4	0	3	4	
D - Male Residence Hall	2			2	2	2	3	2	2	3	2	2	2	4	3	4	2	3	3	3	2	3	0	2	3	
E - Female Residence Hall	2			2	2	2	3	2	2	3	3	2	2	4	3	4	2	3	3	4	2	3	0	2	3	
F - Faculty Office	3			3	2	0	3	2	2	3	0	0	3	2	2	3	2	3	2	4	2	3	0	3	3	
F2 - Faculty Office	3			2	0	0	3	2	3	3	0	2	3	3	3	3	3	2	3	3	2	3	0	2	3	
G - Administration	3			2	3	2	3	3	2	3	3	2	2	3	3	4	3	3	4	3	3	4	0	4	4	
H - Learning Resource Centre	2			2	2	0	3	3	3	3	0	2	3	3	3	4	3	3	3	3	3	3	3	0	2	3
I - Agriculture	2			2	2	0	5	4	4	4	0	0	2	5	4	4	2	3	3	4	4	3	0	2	3	
5.00	Pohnpei Campus, Kolonia, Pohnpei State	J - A+ Centre	2	2	0	0	3	2	3	3	2	2	2	2	3	4	3	3	3	3	3	2	3	0	2	3
		K - Student Services	2	3	3	0	3	2	3	3	0	2	3	4	3	4	3	4	3	3	3	3	0	3	3	
		L - Gymnasium	3	4	3	3	5	4	5	4	3	3	3	4	4	3	4	4	4	4	3	4	0	0	4	
		M - Security, Maintenance, Bookstore & IT	1	2	3	2	5	3	5	4	1	2	3	4	3	3	4	3	3	4	2	4	0	3	3	
		N - Maintenance Shop, Offices & Music Rooms	1	2	2	0	4	3	5	4	0	2	3	3	3	2	4	3	3	3	4	2	3	0	3	
		A - Administration Building (A)	3	4	3	0	3	4	3	3	2	0	3	4	3	4	3	3	3	3	3	2	3	0	2	3
		B - HTM Classroom (H)	3	3	3	0	3	3	3	3	2	0	3	3	3	3	3	3	3	2	4	2	3	0	3	
		D - Electronics Classrooms 8 & 9, Maths/Science Office	5	4	3	3	4	3	3	4	2	0	3	4	3	3	3	3	4	3	2	3	0	2	3	
		E - Classroom 1 - 4	3	3	3	0	5	4	3	3	0	0	3	4	3	3	3	3	3	3	0	3	0	4	3	
		F - Classroom 5 - 7	2	4	3	0	4	2	3	4	0	0	0	3	3	4	3	3	3	3	0	3	0	0	3	
6.00	Kosrae Campus, Tofol, Kosrae State	G - Bookstore (B)	4	5	0	4	4	4	4	3	0	3	4	5	5	3	4	0	3	0	3	0	2	0	3	
		H - Security Post (P)	5	2	2	0	4	5	5	4	0	0	0	4	5	5	0	5	0	0	0	2	0	2	4	
		I - IT Shop (I)	4	3	2	0	5	4	3	4	0	2	0	4	2	3	2	3	0	2	0	2	0	2	2	
		J - UB & TSP (K)	0	5	5	5	0	4	5	4	0	4	5	5	5	5	4	5	4	4	4	4	0	3	4	
		K - PSBDC Building (O)	0	5	5	5	0	4	5	4	0	4	5	5	5	5	4	5	4	4	4	4	0	3	4	
		L - Electrical Shop (E)	2	3	3	3	3	2	2	3	2	2	2	3	3	3	3	3	2	2	2	3	0	3	3	
		M - Maintenance Shop (R)	3	3	3	2	4	3	3	3	2	2	3	3	3	3	2	3	3	5	2	3	0	2	3	
		N - Gymnasium (G)	3	4	3	0	3	4	3	3	0	2	3	4	4	4	2	3	2	2	0	3	0	3	3	
		N - Student Services Centre (L)	3	2	2	0	2	2	3	3	0	2	3	3	2	3	3	3	3	2	0	3	0	2	3	
		P - Mechanic Shop, Mechanic Store & AC Training Room (M)	2	2	3	0	3	3	2	3	0	2	3	3	3	4	3	3	2	2	2	3	0	2	3	

												Element				Structure				Internal Fit-Out				Services																												
												Maintenance Task		Building Wash	External Wall Painting	Protective Coatings to Roof	Wall Cladding Repairs	Roof Cladding Repairs	Door & Window Repairs	Misc Repairs	Floor Finishes Cleaning & Repairs	Internal Wall Painting	Ceiling & Soffit Painting	Internal Door Repairs	Misc Repairs	Fire Suppress. Detection & Alarm Systems	Mechanical Ventilation	A/C Systems	Hot Water Generation	Electrical Services	Hydraulic Services	Comm. Systems	Vertical Transport	Misc Repairs																		
												Unit	ft2	ft2	ft2	ft2	ft2	ft2	LS Allow 250.00	ft2	ft2	ft2	No.	LS Allow 250.00	ft2	ft2	No.	LS Allow 500.00	ft2	No.	LS Allow 250.00	LS Allow 2,500.00	LS Allow 250.00																			
												Rate/Cost (\$ USD)	0.01	0.65	0.93	0.05	0.05	0.25	250.00	0.03	0.56	0.65	25.00	250.00	0.05	100.00	50.00	500.00	0.05	25.00	250.00	2,500.00	250.00																			
												Frequency (Years)	0.50	5.00	7.00	1.00	1.00	1.00	1.00	1.00	12.00	12.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																	
1.00			Yap Campus, Ruul, Yap State		9		23,213		2,157		20,827		1,935		34,873		3,240		5,349		497		13,256		1,231																											
																											Quantity					55,700	20,827	34,873	20,827	34,873	5,349	8	18,469	40,603	18,478	47	7	16,926	14	32	3	18,723	56	6	0	7
																											Total Cost Per Occurrence (\$ USD)					557	13,544	32,397	1,041	1,744	1,337	1,875	554	22,633	12,016	1,175	1,688	846	1,400	1,600	1,500	936	1,400	1,500	0	1,625
																											Annualised Maint. Budget (\$ USD)					1,114	2,709	4,628	1,041	1,744	1,337	1,875	554	1,886	1,001	1,175	1,688	846	1,400	3,200	1,500	936	1,400	1,500	0	1,625
												14,448						6,304						12,407																												
2.00			FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State		6		22,374		2,079		20,439		1,899		28,856		2,681		3,983		370		16,707		1,552																											
																											Quantity					49,295	20,439	28,856	20,439	28,856	3,983	7	22,374	53,853	6,767	73	8	21,454	1	32	0	22,374	54	6	0	9
																											Total Cost Per Occurrence (\$ USD)					493	13,292	26,808	1,022	1,443	996	1,750	671	30,018	4,400	1,825	2,000	1,073	100	1,600	0	1,119	1,350	1,500	0	2,250
																											Annualised Maint. Budget (\$ USD)					986	2,658	3,830	1,022	1,443	996	1,750	671	2,502	367	1,825	2,000	1,073	100	3,200	0	1,119	1,350	1,500	0	2,250
												12,684						7,364						10,591																												
3.00			Chuuk Campus, Nepukos Weno, Chuuk State		11		21,371		1,985		23,052		2,142		35,242		3,274		3,271		304		7,829		727																											
																											Quantity					58,294	23,052	35,242	23,052	35,242	3,271	11	21,371	38,710	29,646	43	11	21,371	3	40	0	21,371	45	10	0	11
																											Total Cost Per Occurrence (\$ USD)					583	14,991	32,741	1,153	1,762	818	2,750	641	21,578	19,280	1,075	2,750	1,069	300	2,000	0	1,069	1,125	2,500	0	2,750
																											Annualised Maint. Budget (\$ USD)					1,166	2,998	4,677	1,153	1,762	818	2,750	641	1,798	1,607	1,075	2,750	1,069	300	4,000	0	1,069	1,125	2,500	0	2,750
												15,324						7,871						12,812																												
4.00			National Campus, Palikir, Pohnpei State		15		124,691		11,584		100,098		9,299		130,619		12,135		24,769		2,301		49,858		4,632																											
																											Quantity					230,717	100,098	130,619	100,098	130,619	24,769	34	124,691	199,814	101,023	327	35	124,691	32	153	6	124,691	282	32	1	35
																											Total Cost Per Occurrence (\$ USD)					2,307	65,095	121,348	5,005	6,531	6,192	8,500	3,741	111,379	65,697	8,175	8,750	6,235	3,200	7,650	3,000	6,235	7,050	8,000	2,500	8,750
																											Annualised Maint. Budget (\$ USD)					4,614	13,019	17,335	5,005	6,531	6,192	8,500	3,741	9,282	5,475	8,175	8,750	6,235	3,200	15,300	3,000	6,235	7,050	8,000	2,500	8,750
												61,197						35,422						60,269																												
5.00			Pohnpei Campus, Kolonia, Pohnpei State		16		70,087		6,511		62,069		5,766		83,974		7,801		11,829		1,099		37,100		3,447																											
																											Quantity					146,043	62,069	83,974	62,069	83,974	11,829	44	70,087	136,268	81,658	107	44	70,087	20	95	3	70,087	117	41	0	41
																											Total Cost Per Occurrence (\$ USD)					1,460	40,364	78,014	3,103	4,199	2,957	11,000	2,103	75,958	53,104	2,675	11,000	3,504	2,000	4,750	1,500	3,504	2,925	10,250	0	10,250
																											Annualised Maint. Budget (\$ USD)					2,921	8,073	11,145	3,103	4,199	2,957	11,000	2,103	6,330	4,425	2,675	11,000	3,504	2,000	9,500	1,500	3,504	2,925	10,250	0	10,250
												43,398						26,533						43,434																												
6.00			Kosrae Campus, Tofol, Kosrae State		11		23,401		2,174		22,961		2,133		33,311		3,095		4,569		424		5,159		479																											
																											Quantity					56,272	22,961	33,311	22,961	33,311	4,569	12	23,401	33,279	29,439	36	12	23,401	7	37	0	23,401	48	12	0	12
																											Total Cost Per Occurrence (\$ USD)					563	14,932	30,947	1,148	1,666	1,142	3,000	702	18,550	19,144	900	3,000	1,170	700	1,850	0	1,170	1,200	3,000	0	3,000
																											Annualised Maint. Budget (\$ USD)					1,125	2,986	4,421	1,148	1,666	1,142	3,000	702	1,546	1,595	900	3,000	1,170	700	3,700	0	1,170	1,200	3,000	0	3,000
												15,489						7,743						13,940																												
Total			68		285,138		26,490		249,445		23,174		346,876		32,226		53,770		4,995		129,909		12,069																													
																									Total Quantity					596,321	249,445	346,876	249,445	346,876	53,770	116	280,394	502,527	267,011	633	117	277,931	77	389	12	280,648	602	107	1	115		
																									Total Annualised Maint. Budget (\$ USD)					11,926	32,444	46,036	12,472	17,344	13,442	28,875	8,412	23,343	14,470	15,825	29,188	13,897	7,700	38,900	6,000	14,032	15,050	26,750	2,500	28,625		
																																					162,540						91,237						153,454			
												Labour Portion (%)		80%	50%	50%	60%	60%	50%	50%	80%	60%	60%	50%	50%	50%	70%	70%	70%	70%	70%	70%	40%	50%																		
												Labour Cost (\$ USD)		9,541	16,222	23,018	7,483	10,406	6,721	14,438	6,729	14,006	8,682	7,913	14,594	6,948	5,390	27,230	4,200	9,823	10,535	18,725	1,000	14,313																		
												Labour Hours (Based on \$3/Hour)		3,180	5,407	7,673	2,494	3,469	2,240	4,813	2,243	4,669	2,894	2,638	4,865	2,316	1,797	9,077	1,400	3,274	3,512	6,242	333	4,771																		
																						Number Maintenance Staff Required (Based on 1,800 Hours/PA)										44.1																				
												Plant Portion (%)		10%	10%	10%	10%	10%	0%	0%	10%	10%	10%	0%	0%	0%	10%	10%	10%	10%	10%	0%	20%	0%																		
												Plant Cost (\$ USD)		1,193	3,244	4,604	1,247	1,734	0	0	841	2,334	1,447	0	0	0	770	3,890	600	1,403	1,505	0	500	0																		
												Material Portion (%)		10%	40%	40%	30%	30%	50%	50%	10%	30%	30%	50%	50%	50%	20%	20%	20%	20%	20%	30%	40%	50%																		
												Material Cost (\$ USD)		1,193	12,977	18,415	3,742	5,203	6,721	14,438	841	7,003	4,341	7,913	14,594	6,948	1,540	7,780	1,200	2,806	3,010	8,025	1,000	14,313																		

**COLLEGE OF MICRONESIA - FSM**

## SUMMARY OF MAINTENANCE COSTS (SITE INFRASTRUCTURE)

June 2013

3 - Draft Version Only



											Element	Grounds Keeping				Car Parks, Roads & Pavements			Fences & Gates		Structures			Site Drainage			Electrical Infrastructure		Water Services	Site Furniture	Telecom Services				
											Maintenance Task	Mowing	Spraying	General Grounds Keeping	Pruning & General Tree Maint.	Regrade, Relevel & Compact Gravel Surface	Pot/Crack Fill Asphalt Surface	Pot/Crack Fill Concrete Surface	Repaint Fences & Gates	Gate & Repairs	Minor Building Structures Wash	Minor Building Structures General Repairs	Minor Building Structures Repaint	Site Stormwater Drainage Maint.	Building Stormwater Drainage Maint.	Building Sewer Drainage Maint.	General Electrical Maint.	General Electrical Servicing	General Water Services Maint.	General Site Furniture Maint.	General Telecom Services				
											Unit	LS Allow / Green Area 0.00023	LS Allow / Green Area 0.00012	LS Allow / Green Area 0.00046	LS Allow. 2,500.00	LS Allow / Area 0.28	LS Allow / Area 0.05	LS Allow / Area 0.05	LS Allow. 2,000.00	LS Allow. 500.00	LS Allow / GFA 0.01	LS Allow / Building No 100.00	LS Allow / GFA 0.65	LS Allow / Building 50.00	LS Allow / Building 50.00	LS Allow / Building 100.00	LS Allow 1,000.00	LS Allow 1,000.00	LS Allow / Building 25.00	LS Allow. 1,000.00	LS Allow / Building 25.00				
Ref	Location										Total Buildings No.	Total Building Area ft2 m2		Total Hard Surface Areas ft2 m2		Total Green Surface Areas ft2 m2		Site Area ft2 m2		Rate/Cost (\$ USD) Frequency (Years)															
1.00	Yap Campus, Ruul, Yap State										9	23,213	2,157	15,426	1,433	266,283	24,738	304,923	28,328																
											Quantity	266,283	266,283	266,283	1	2,460	9,872	5,554	1	1	1,765	3	1,765	1	9	9	9	1	9	1	9	1	9	1	9
											Total Cost Per Occurrence (\$ USD)	62	31	124	2,500	686	494	278	2,000	500	18	300	1,148	1,000	450	450	900	1,000	225	1,000	225	1,000	225	1,000	225
											Annualised Maint. Budget (\$ USD)	742	62	495	2,500	686	494	278	400	500	35	300	230	1,000	450	450	900	1,000	225	1,000	225	1,000	225	1,000	225
											3,799				1,457			900		565			1,900			1,900		1,450							
											Total												11,971												8.2%
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State										6	22,374	2,079	6,052	562	1,541,891	143,245	1,570,317	145,886																
											Quantity	462,567	462,567	462,567	1	12,917	0	6,052	0	1	2,289	3	2,289	1	6	6	6	1	6	1	6	1	6	1	6
											Total Cost Per Occurrence (\$ USD)	107	54	215	2,500	3,600	0	303	0	500	23	300	1,488	1,000	300	300	600	1,000	150	1,000	150	1,000	150	1,000	150
											Annualised Maint. Budget (\$ USD)	1,289	107	859	2,500	3,600	0	303	0	500	46	300	298	1,000	300	300	600	1,000	150	1,000	150	1,000	150	1,000	150
											4,756				3,903			500		643			1,600			1,600		1,300							
											Total												14,302												9.8%
3.00	Chuuk Campus, Nepukos Weno, Chuuk State										11	21,371	1,985	9,288	863	59,747	5,551	90,407	8,399																
											Quantity	59,747	59,747	59,747	1	5,517	0	3,772	1	1	1,322	3	1,322	1	11	11	11	1	11	1	11	1	11	1	11
											Total Cost Per Occurrence (\$ USD)	14	7	28	2,500	1,538	0	189	2,000	500	13	300	859	1,000	550	550	1,100	1,000	275	1,000	275	1,000	275	1,000	275
											Annualised Maint. Budget (\$ USD)	167	14	111	2,500	1,538	0	189	400	500	26	300	172	1,000	550	550	1,100	1,000	275	1,000	275	1,000	275	1,000	275
											2,791				1,726			900		498			2,100			2,100		1,550							
											Total												11,666												8.0%
4.00	National Campus, Palikir, Pohnpei State										15	124,691	11,584	323,488	30,053	2,853,895	265,133	3,177,382	295,186																
											Quantity	2,853,895	2,853,895	2,853,895	2	17,590	172,632	116,033	2	2	18,219	10	18,219	1	15	15	15	1	15	1	15	1	15	1	15
											Total Cost Per Occurrence (\$ USD)	663	331	1,326	5,000	4,903	8,632	5,802	4,000	1,000	182	1,000	11,848	1,000	750	750	1,500	1,000	375	1,000	375	1,000	375	1,000	375
											Annualised Maint. Budget (\$ USD)	7,954	663	5,303	5,000	4,903	8,632	5,802	800	1,000	364	1,000	2,370	1,000	750	750	1,500	1,000	375	1,000	375	1,000	375	1,000	375
											18,919				19,336			1,800		3,734			2,500			2,500		1,750							
											Total												50,539												34.5%
5.00	Pohnpei Campus, Kolonia, Pohnpei State										17	70,087	6,511	86,161	8,005	644,456	59,871	730,617	67,876																
											Quantity	644,456	644,456	644,456	2	53,975	0	23,687	2	2	8,388	17	7,129	2	17	17	17	1	17	2	17	2	17		
											Total Cost Per Occurrence (\$ USD)	150	75	299	5,000	15,043	0	1,184	4,000	1,000	84	1,700	4,636	2,000	850	850	1,700	1,000	425	2,000	425	1,000	425		
											Annualised Maint. Budget (\$ USD)	1,796	150	1,197	5,000	15,043	0	1,184	800	1,000	168	1,700	927	2,000	850	850	1,700	1,000	425	2,000	425	1,000	425		
											8,143				16,228			1,800		2,795			3,700			2,700		2,850							
											Total												38,216												28.1%
6.00	Korae Campus, Tofol, Korae State										11	23,401	2,174	42,718	3,969	344,086	31,966	410,205	38,109																
											Quantity	344,086	344,086	344,086	1	24,385	0	11,116	1	2	6,913	3	6,348	1	11	11	11	1	11	1	11	1	11		
											Total Cost Per Occurrence (\$ USD)	80	40	160	2,500	6,796	0	556	2,000	1,000	69	300	4,128	1,000	550	550	1,100	1,000	275	1,000	275	1,000	275		
											Annualised Maint. Budget (\$ USD)	959	80	639	2,500	6,796	0	556	400	1,000	138	300	826	1,000	550	550	1,100	1,000	275	1,000	275	1,000	275		
											4,178				7,352			1,400		1,264			2,100			2,100		1,550							
											Total												19,944												13.6%
Total											69	285,138	26,490	483,132	44,884	5,710,359	530,505	6,283,851	583,784																
											Total Quantity	4,631,035	4,631,035	4,631,035	8	116,844	182,505	166,213	7	9	38,895	39	37,071	7	69	69	69	6	69	7	69	7	69		
											Total Annualised Maint. Budget (\$ USD)	12,907	1,076	8,605	20,000	32,565	9,125	8,311	2,800	4,500	778	3,900	4,822	7,000	3,450	3,450	6,900	6,000	1,725	7,000	1,725	1,000	1,725		
											42,587				50,001			7,300		9,499			13,900			12,900		10,450							
											Labour Portion (%)	70%	35%	50%	70%	30%	30%	30%	70%	80%	70%	50%	60%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	
											Labour Cost (\$ USD)	9,035	376	4,302	14,000	9,770	2,738	2,493	1,960	3,600	545	1,950	2,893	3,500	1,725	1,725	3,450	3,000	863	3,500	863	1,000	863		
											Labour Hours (Based on \$3/Hour)	3,012	125	1,434	4,667	3,257	913	831	653	1,200	182	650	964	1,167	575	575	1,150	1,000	288	1,167	288	1,000	288		
																						Number Maintenance Staff Required (Based on 1,800 Hours/PA)			13.4										
											Plant Portion (%)	30%	30%	25%	30%	50%	50%	50%	0%	0%	20%	20%	10%	30%	30%	30%	30%	30%	30%	0%	30%				
											Plant Cost (\$ USD)	3,872	323	2,151	6,000	16,283	4,563	4,155	0	0	156	780	482	2,100	1,035	1,035	2,070	1,800	518	0	518				
											Material Portion (%)	0%	35%	25%	0%	20%	20%	20%	30%	20%	10%	30%	30%	20%	20%	20%	20%	20%	20%	50%	20%				
											Material Cost (\$ USD)	0	376	2,151	0	6,513	1,825	1,662	840	900	78	1,170	1,446	1,400	690	690	1,380	1,200	345	3,500	345				
											Total												26,512												





Ref	Campus	Building Area		Site Area		Base Maintenance Assessment	Assessment Re-Calculated based on Voluntary Labour Maintenance Regime			Variance from Base Assessment (Excluding Escalation)	Voluntary Labour		
		GFA (ft2)	GFA (m2)	Area (ft2)	Area (m2)	Total Annualised Maintenance Cost (Excluding Escalation)	Buildings Total Annualised Maintenance Cost (Excluding Escalation)	Site Infrastructure Total Annualised Maintenance Cost (Excluding Escalation)	Total Annualised Maintenance Cost (Excluding Escalation)		Total Voluntary Labour Required	Site Infrastructure Total Voluntary Labour Required	Total Voluntary Labour Required
1.00	Yap Campus, Ruul, Yap State	23,213	2,157	304,923	28,328	45,130	23,204	9,531	32,735	(12,395)	3,318	813	4,132
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	22,374	2,079	1,570,317	145,886	44,942	22,040	11,912	33,951	(10,991)	2,867	797	3,664
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	21,371	1,985	90,407	8,399	47,673	25,670	9,459	35,129	(12,543)	3,445	736	4,181
4.00	National Campus, Palikir, Pohnpei State	124,691	11,584	3,177,382	295,186	207,427	113,223	42,151	155,374	(52,053)	14,555	2,796	17,351
5.00	Pohnpei Campus, Kolonia, Pohnpei State	70,087	6,511	730,617	67,876	151,580	85,234	32,883	118,117	(33,463)	9,377	1,777	11,154
6.00	Kosrae Campus, Tofol, Kosrae State	23,401	2,174	410,205	38,109	57,116	27,042	17,002	44,044	(13,072)	3,377	981	4,357
Total		285,138	26,490	6,283,851	583,784	553,869	296,413	122,938	419,351	(134,518)	36,939	7,900	44,839
											Total Student Roll (Approximate Only)		2,500
											Average Hours Required Per Student		18



Ref	Building	Gross Floor Area (GFA)		External Wall Area (EWA)		Roof Area (RA)		Door & Window Area (DWA)		Internal Wall Area (IWA)																										
		ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2																									
1.00	Yap Campus, Ruul, Yap State	23,213	2,157	20,827	1,935	34,873	3,240	5,349	497	13,256	1,231																									
		<table><tr><td>Maintenance Element</td><td>Structure Cost (\$ USD)</td><td>Internal Fit-Out Cost (\$ USD)</td><td>Services Cost (\$ USD)</td><td></td></tr><tr><td>OPT1 - Total - Fully Employed Labour Regime Only</td><td>14,448</td><td>6,304</td><td>12,407</td><td>33,160</td></tr><tr><td>OPT2 - Total - Combined Employed &amp; Voluntary Labour Regime</td><td>9,889</td><td>4,128</td><td>9,187</td><td>23,204</td></tr><tr><td>Total - Cost Saving</td><td>(4,560)</td><td>(2,176)</td><td>(3,220)</td><td>(9,955)</td></tr><tr><td>Total - Voluntary Labour Required (Hours)</td><td>1,520</td><td>725</td><td>1,073</td><td>3,318</td></tr></table>										Maintenance Element	Structure Cost (\$ USD)	Internal Fit-Out Cost (\$ USD)	Services Cost (\$ USD)		OPT1 - Total - Fully Employed Labour Regime Only	14,448	6,304	12,407	33,160	OPT2 - Total - Combined Employed & Voluntary Labour Regime	9,889	4,128	9,187	23,204	Total - Cost Saving	(4,560)	(2,176)	(3,220)	(9,955)	Total - Voluntary Labour Required (Hours)	1,520	725	1,073	3,318
Maintenance Element	Structure Cost (\$ USD)	Internal Fit-Out Cost (\$ USD)	Services Cost (\$ USD)																																	
OPT1 - Total - Fully Employed Labour Regime Only	14,448	6,304	12,407	33,160																																
OPT2 - Total - Combined Employed & Voluntary Labour Regime	9,889	4,128	9,187	23,204																																
Total - Cost Saving	(4,560)	(2,176)	(3,220)	(9,955)																																
Total - Voluntary Labour Required (Hours)	1,520	725	1,073	3,318																																
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	22,374	2,079	20,439	1,899	28,856	2,681	3,983	370	16,707	1,552																									
		<table><tr><td>OPT1 - Total - Fully Employed Labour Regime Only</td><td>12,684</td><td>7,364</td><td>10,591</td><td>30,640</td></tr><tr><td>OPT2 - Total - Combined Employed &amp; Voluntary Labour Regime</td><td>8,652</td><td>5,107</td><td>8,281</td><td>22,040</td></tr><tr><td>Total - Cost Saving</td><td>(4,033)</td><td>(2,258)</td><td>(2,310)</td><td>(8,601)</td></tr><tr><td>Total - Voluntary Labour Required (Hours)</td><td>1,344</td><td>753</td><td>770</td><td>2,867</td></tr></table>										OPT1 - Total - Fully Employed Labour Regime Only	12,684	7,364	10,591	30,640	OPT2 - Total - Combined Employed & Voluntary Labour Regime	8,652	5,107	8,281	22,040	Total - Cost Saving	(4,033)	(2,258)	(2,310)	(8,601)	Total - Voluntary Labour Required (Hours)	1,344	753	770	2,867					
OPT1 - Total - Fully Employed Labour Regime Only	12,684	7,364	10,591	30,640																																
OPT2 - Total - Combined Employed & Voluntary Labour Regime	8,652	5,107	8,281	22,040																																
Total - Cost Saving	(4,033)	(2,258)	(2,310)	(8,601)																																
Total - Voluntary Labour Required (Hours)	1,344	753	770	2,867																																
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	21,371	1,985	23,052	2,142	35,242	3,274	3,271	304	7,829	727																									
		<table><tr><td>OPT1 - Total - Fully Employed Labour Regime Only</td><td>15,324</td><td>7,871</td><td>12,812</td><td>36,007</td></tr><tr><td>OPT2 - Total - Combined Employed &amp; Voluntary Labour Regime</td><td>10,553</td><td>5,315</td><td>9,802</td><td>25,670</td></tr><tr><td>Total - Cost Saving</td><td>(4,770)</td><td>(2,556)</td><td>(3,010)</td><td>(10,336)</td></tr><tr><td>Total - Voluntary Labour Required (Hours)</td><td>1,590</td><td>852</td><td>1,003</td><td>3,445</td></tr></table>										OPT1 - Total - Fully Employed Labour Regime Only	15,324	7,871	12,812	36,007	OPT2 - Total - Combined Employed & Voluntary Labour Regime	10,553	5,315	9,802	25,670	Total - Cost Saving	(4,770)	(2,556)	(3,010)	(10,336)	Total - Voluntary Labour Required (Hours)	1,590	852	1,003	3,445					
OPT1 - Total - Fully Employed Labour Regime Only	15,324	7,871	12,812	36,007																																
OPT2 - Total - Combined Employed & Voluntary Labour Regime	10,553	5,315	9,802	25,670																																
Total - Cost Saving	(4,770)	(2,556)	(3,010)	(10,336)																																
Total - Voluntary Labour Required (Hours)	1,590	852	1,003	3,445																																
4.00	National Campus, Palikir, Pohnpei State	124,691	11,584	100,098	9,299	130,619	12,135	24,769	2,301	49,858	4,632																									
		<table><tr><td>OPT1 - Total - Fully Employed Labour Regime Only</td><td>61,197</td><td>35,422</td><td>60,269</td><td>156,888</td></tr><tr><td>OPT2 - Total - Combined Employed &amp; Voluntary Labour Regime</td><td>42,328</td><td>23,576</td><td>47,319</td><td>113,223</td></tr><tr><td>Total - Cost Saving</td><td>(18,869)</td><td>(11,846)</td><td>(12,950)</td><td>(43,665)</td></tr><tr><td>Total - Voluntary Labour Required (Hours)</td><td>6,290</td><td>3,949</td><td>4,317</td><td>14,555</td></tr></table>										OPT1 - Total - Fully Employed Labour Regime Only	61,197	35,422	60,269	156,888	OPT2 - Total - Combined Employed & Voluntary Labour Regime	42,328	23,576	47,319	113,223	Total - Cost Saving	(18,869)	(11,846)	(12,950)	(43,665)	Total - Voluntary Labour Required (Hours)	6,290	3,949	4,317	14,555					
OPT1 - Total - Fully Employed Labour Regime Only	61,197	35,422	60,269	156,888																																
OPT2 - Total - Combined Employed & Voluntary Labour Regime	42,328	23,576	47,319	113,223																																
Total - Cost Saving	(18,869)	(11,846)	(12,950)	(43,665)																																
Total - Voluntary Labour Required (Hours)	6,290	3,949	4,317	14,555																																
5.00	Pohnpei Campus, Kolonia, Pohnpei State	70,087	6,511	62,069	5,766	83,974	7,801	11,829	1,099	37,100	3,447																									
		<table><tr><td>OPT1 - Total - Fully Employed Labour Regime Only</td><td>43,398</td><td>26,533</td><td>43,434</td><td>113,364</td></tr><tr><td>OPT2 - Total - Combined Employed &amp; Voluntary Labour Regime</td><td>31,452</td><td>18,398</td><td>35,384</td><td>85,234</td></tr><tr><td>Total - Cost Saving</td><td>(11,946)</td><td>(8,135)</td><td>(8,050)</td><td>(28,131)</td></tr><tr><td>Total - Voluntary Labour Required (Hours)</td><td>3,982</td><td>2,712</td><td>2,683</td><td>9,377</td></tr></table>										OPT1 - Total - Fully Employed Labour Regime Only	43,398	26,533	43,434	113,364	OPT2 - Total - Combined Employed & Voluntary Labour Regime	31,452	18,398	35,384	85,234	Total - Cost Saving	(11,946)	(8,135)	(8,050)	(28,131)	Total - Voluntary Labour Required (Hours)	3,982	2,712	2,683	9,377					
OPT1 - Total - Fully Employed Labour Regime Only	43,398	26,533	43,434	113,364																																
OPT2 - Total - Combined Employed & Voluntary Labour Regime	31,452	18,398	35,384	85,234																																
Total - Cost Saving	(11,946)	(8,135)	(8,050)	(28,131)																																
Total - Voluntary Labour Required (Hours)	3,982	2,712	2,683	9,377																																
6.00	Kosrae Campus, Tofol, Kosrae State	23,401	2,174	22,961	2,133	33,311	3,095	4,569	424	5,159	479																									
		<table><tr><td>OPT1 - Total - Fully Employed Labour Regime Only</td><td>15,489</td><td>7,743</td><td>13,940</td><td>37,172</td></tr><tr><td>OPT2 - Total - Combined Employed &amp; Voluntary Labour Regime</td><td>10,885</td><td>5,297</td><td>10,860</td><td>27,042</td></tr><tr><td>Total - Cost Saving</td><td>(4,604)</td><td>(2,446)</td><td>(3,080)</td><td>(10,130)</td></tr><tr><td>Total - Voluntary Labour Required (Hours)</td><td>1,535</td><td>815</td><td>1,027</td><td>3,377</td></tr></table>										OPT1 - Total - Fully Employed Labour Regime Only	15,489	7,743	13,940	37,172	OPT2 - Total - Combined Employed & Voluntary Labour Regime	10,885	5,297	10,860	27,042	Total - Cost Saving	(4,604)	(2,446)	(3,080)	(10,130)	Total - Voluntary Labour Required (Hours)	1,535	815	1,027	3,377					
OPT1 - Total - Fully Employed Labour Regime Only	15,489	7,743	13,940	37,172																																
OPT2 - Total - Combined Employed & Voluntary Labour Regime	10,885	5,297	10,860	27,042																																
Total - Cost Saving	(4,604)	(2,446)	(3,080)	(10,130)																																
Total - Voluntary Labour Required (Hours)	1,535	815	1,027	3,377																																
Total		285,138	26,490	249,445	23,174	346,876	32,226	53,770	4,995	129,909	12,069																									
		<table><tr><td>OPT1 - Grand Total - Fully Employed Labour Regime Only</td><td>162,540</td><td>91,237</td><td>153,454</td><td>407,231</td></tr><tr><td>OPT2 - Grand Total - Combined Employed &amp; Voluntary Labour Regime</td><td>113,759</td><td>61,820</td><td>120,834</td><td>296,413</td></tr><tr><td>Grand Total - Cost Saving</td><td>(48,781)</td><td>(29,417)</td><td>(32,620)</td><td>(110,818)</td></tr><tr><td>Grand Total - Voluntary Labour Required (Hours)</td><td>16,260</td><td>9,806</td><td>10,873</td><td>36,939</td></tr><tr><td>Cost Saving as %</td><td>43%</td><td>48%</td><td>27%</td><td>37%</td></tr></table>										OPT1 - Grand Total - Fully Employed Labour Regime Only	162,540	91,237	153,454	407,231	OPT2 - Grand Total - Combined Employed & Voluntary Labour Regime	113,759	61,820	120,834	296,413	Grand Total - Cost Saving	(48,781)	(29,417)	(32,620)	(110,818)	Grand Total - Voluntary Labour Required (Hours)	16,260	9,806	10,873	36,939	Cost Saving as %	43%	48%	27%	37%
OPT1 - Grand Total - Fully Employed Labour Regime Only	162,540	91,237	153,454	407,231																																
OPT2 - Grand Total - Combined Employed & Voluntary Labour Regime	113,759	61,820	120,834	296,413																																
Grand Total - Cost Saving	(48,781)	(29,417)	(32,620)	(110,818)																																
Grand Total - Voluntary Labour Required (Hours)	16,260	9,806	10,873	36,939																																
Cost Saving as %	43%	48%	27%	37%																																



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												Element	Structure							Internal Fit-Out					Services										
												Maintenance Task	Building Wash	External Wall Painting	Protective Coatings to Roof	Wall Cladding Repairs	Roof Cladding Repairs	Door & Window Repairs	Misc Repairs	Floor Finishes Cleaning & Repairs	Internal Wall Painting	Ceiling & Soffit Painting	Internal Door Repairs	Misc Repairs	Fire Suppress. Detection & Alarm Systems	Mechanical Ventilation	A/C Systems	Hot Water Generation	Electrical Services	Hydraulic Services	Comm. Systems	Vertical Transport	Misc Repairs		
												Unit	ft2	ft2	ft2	ft2	ft2	ft2	LS Allow 250.00	ft2	ft2	ft2	No.	LS Allow 250.00	ft2	LS Allow 100.00	No.	LS Allow 500.00	ft2	No.	LS Allow 250.00	LS Allow 2,500.00	LS Allow 250.00		
												Rate/Cost (\$ USD)	0.01	0.65	0.93	0.05	0.05	0.25	250.00	0.03	0.56	0.65	25.00	250.00	0.05	100.00	50.00	500.00	0.05	25.00	250.00	2,500.00	250.00		
												Frequency (Years)	0.50	5.00	7.00	1.00	1.00	1.00	1.00	1.00	12.00	12.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ref	Building	Gross Floor Area (GFA)		External Wall Area (EWA)		Roof Area (RA)		Door & Window Area (DWA)		Internal Wall Area (IWA)																									
		ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2																								
1.00	Yap Campus, Ruul, Yap State	23,213	2,157	20,827	1,935	34,873	3,240	5,349	497	13,256	1,231																								
												Quantity	55,700	20,827	34,873	20,827	34,873	5,349	8	18,469	40,603	18,478	47	7	16,926	14	32	3	18,723	56	6	0	7	Total	
												Total Cost Per Occurrence (\$ USD)	557	13,544	32,397	1,041	1,744	1,337	1,875	554	22,633	12,016	1,175	1,688	846	1,400	1,600	1,500	936	1,400	1,500	0	1,625		
												Annualised Maint. Budget (\$ USD)	1,114	2,709	4,628	1,041	1,744	1,337	1,875	554	1,886	1,001	1,175	1,688	846	1,400	3,200	1,500	936	1,400	1,500	0	1,625	33,160	
												14,448							6,304					12,407											
												Labour Portion (%)	80%	50%	50%	60%	60%	50%	50%	80%	60%	60%	50%	50%	50%	70%	70%	70%	70%	70%	70%	40%	50%	19,635	
												Labour Cost (\$ USD)	891	1,354	2,314	625	1,046	669	938	443	1,132	601	588	844	423	980	2,240	1,050	655	980	1,050	0	813		
												Labour Hours (Based on \$3/Hour)	297	451	771	208	349	223	313	148	377	200	196	281	141	327	747	350	218	327	350	0	271	6,545	
												Voluntary Labour	297	451	771	0	0	0	0	148	377	200	0	0	0	327	747	0	0	0	0	0	0	0	3,318
												Employed or Contract Labour	0	0	0	208	349	223	313	0	0	0	196	281	141	0	0	350	218	327	350	0	271	3,226	
												Labour Savings (Based on \$3/Hour)	-891	-1,354	-2,314	0	0	0	0	-443	-1,132	-601	0	0	0	-980	-2,240	0	0	0	0	0	0	0	-9,955
												Adjusted Labour Cost (\$ USD)	0	0	0	625	1,046	669	938	0	0	0	588	844	423	0	0	1,050	655	980	1,050	0	813	9,679	
												Plant Portion (%)	10%	10%	10%	10%	10%	0%	0%	10%	10%	10%	0%	0%	0%	10%	10%	10%	10%	10%	0%	20%	0%	2,311	
												Plant Cost (\$ USD)	111	271	463	104	174	0	0	55	189	100	0	0	0	140	320	150	94	140	0	0	0		
												Material Portion (%)	10%	40%	40%	30%	30%	50%	50%	10%	30%	30%	50%	50%	50%	20%	20%	20%	20%	20%	30%	40%	50%	11,214	
												Material Cost (\$ USD)	111	1,084	1,851	312	523	669	938	55	566	300	588	844	423	280	640	300	187	280	450	0	813		
												Adjusted Annualised Maint. Budget (\$ USD)	223	1,354	2,314	1,041	1,744	1,337	1,875	111	754	401	1,175	1,688	846	420	960	1,500	936	1,400	1,500	0	1,625	23,204	
												9,889							4,128					9,187											



												Element	Structure							Internal Fit-Out					Services										
												Maintenance Task	Building Wash	External Wall Painting	Protective Coatings to Roof	Wall Cladding Repairs	Roof Cladding Repairs	Door & Window Repairs	Misc Repairs	Floor Finishes Cleaning & Repairs	Internal Wall Painting	Ceiling & Soffit Painting	Internal Door Repairs	Misc Repairs	Fire Suppress. Detection & Alarm Systems	Mechanical Ventilation	A/C Systems	Hot Water Generation	Electrical Services	Hydraulic Services	Comm. Systems	Vertical Transport	Misc Repairs		
												Unit	ft2	ft2	ft2	ft2	ft2	ft2	LS Allow 250.00	ft2	ft2	ft2	No.	LS Allow 250.00	ft2	LS Allow 100.00	No.	LS Allow 500.00	ft2	No.	LS Allow 250.00	LS Allow 2,500.00	LS Allow 250.00		
												Rate/Cost (\$ USD)	0.01	0.65	0.93	0.05	0.05	0.25		0.03	0.56	0.65	25.00		0.05		50.00		0.05		25.00		250.00		
												Frequency (Years)	0.50	5.00	7.00	1.00	1.00	1.00		1.00	12.00	12.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00		
Ref	Building	Gross Floor Area (GFA)		External Wall Area (EWA)		Roof Area (RA)		Door & Window Area (DWA)		Internal Wall Area (IWA)																									
		ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2																								
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	22,374	2,079	20,439	1,899	28,856	2,681	3,983	370	16,707	1,552	Quantity	49,295	20,439	28,856	20,439	28,856	3,983	7	22,374	53,853	6,767	73	8	21,454	1	32	0	22,374	54	6	0	9		
												Total Cost Per Occurrence (\$ USD)	493	13,292	26,808	1,022	1,443	996	1,750	671	30,018	4,400	1,825	2,000	1,073	100	1,600	0	1,119	1,350	1,500	0	2,250	Total	
												Annualised Maint. Budget (\$ USD)	986	2,658	3,830	1,022	1,443	996	1,750	671	2,502	367	1,825	2,000	1,073	100	3,200	0	1,119	1,350	1,500	0	2,250	30,640	
												12,684							7,364					10,591											
												Labour Portion (%)	80%	50%	50%	60%	60%	50%	50%	80%	60%	60%	50%	50%	50%	70%	70%	70%	70%	70%	70%	40%	50%		
												Labour Cost (\$ USD)	789	1,329	1,915	613	866	498	875	537	1,501	220	913	1,000	536	70	2,240	0	783	945	1,050	0	1,125	17,804	
												Labour Hours (Based on \$3/Hour)	263	443	638	204	289	166	292	179	500	73	304	333	179	23	747	0	261	315	350	0	375	5,935	
												Voluntary Labour	263	443	638	0	0	0	0	179	500	73	0	0	0	23	747	0	0	0	0	0	0	0	2,867
												Employed or Contract Labour	0	0	0	204	289	166	292	0	0	0	304	333	179	0	0	0	261	315	350	0	375	3,068	
												Labour Savings (Based on \$3/Hour)	-789	-1,329	-1,915	0	0	0	0	-537	-1,501	-220	0	0	0	-70	-2,240	0	0	0	0	0	0	-8,601	
												Adjusted Labour Cost (\$ USD)	0	0	0	613	866	498	875	0	0	0	913	1,000	536	0	0	0	783	945	1,050	0	1,125	9,204	
												Plant Portion (%)	10%	10%	10%	10%	10%	0%	0%	10%	10%	10%	0%	0%	0%	10%	10%	10%	10%	10%	0%	20%	0%		
												Plant Cost (\$ USD)	99	266	383	102	144	0	0	67	250	37	0	0	0	10	320	0	112	135	0	0	0	1,925	
												Material Portion (%)	10%	40%	40%	30%	30%	50%	50%	10%	30%	30%	50%	50%	50%	20%	20%	20%	20%	20%	30%	40%	50%		
												Material Cost (\$ USD)	99	1,063	1,532	307	433	498	875	67	750	110	913	1,000	536	20	640	0	224	270	450	0	1,125	10,911	
												Adjusted Annualised Maint. Budget (\$ USD)	197	1,329	1,915	1,022	1,443	996	1,750	134	1,001	147	1,825	2,000	1,073	30	960	0	1,119	1,350	1,500	0	2,250	22,040	
												8,652							5,107					8,281											



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												Element	Structure							Internal Fit-Out					Services										
												Maintenance Task	Building Wash	External Wall Painting	Protective Coatings to Roof	Wall Cladding Repairs	Roof Cladding Repairs	Door & Window Repairs	Misc Repairs	Floor Finishes Cleaning & Repairs	Internal Wall Painting	Ceiling & Soffit Painting	Internal Door Repairs	Misc Repairs	Fire Suppress. Detection & Alarm Systems	Mechanical Ventilation	A/C Systems	Hot Water Generation	Electrical Services	Hydraulic Services	Comm. Systems	Vertical Transport	Misc Repairs		
												Unit	ft2	ft2	ft2	ft2	ft2	ft2	LS Allow	ft2	ft2	ft2	No.	LS Allow	ft2	ft2	No.	LS Allow	ft2	No.	LS Allow	LS Allow	LS Allow	LS Allow	
												Rate/Cost (\$ USD)	0.01	0.65	0.93	0.05	0.05	0.25	250.00	0.03	0.56	0.65	25.00	250.00	0.05	100.00	50.00	500.00	0.05	25.00	250.00	2,500.00	250.00		
												Frequency (Years)	0.50	5.00	7.00	1.00	1.00	1.00	1.00	1.00	12.00	12.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ref	Building	Gross Floor Area (GFA)		External Wall Area (EWA)		Roof Area (RA)		Door & Window Area (DWA)		Internal Wall Area (IWA)																									
		ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2																								
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	21,371	1,985	23,052	2,142	35,242	3,274	3,271	304	7,829	727																								
												Quantity	58,294	23,052	35,242	23,052	35,242	3,271	11	21,371	38,710	29,646	43	11	21,371	3	40	0	21,371	45	10	0	11	Total	
												Total Cost Per Occurrence (\$ USD)	583	14,991	32,741	1,153	1,762	818	2,750	641	21,578	19,280	1,075	2,750	1,069	300	2,000	0	1,069	1,125	2,500	0	2,750		
												Annualised Maint. Budget (\$ USD)	1,166	2,998	4,677	1,153	1,762	818	2,750	641	1,798	1,607	1,075	2,750	1,069	300	4,000	0	1,069	1,125	2,500	0	2,750	36,007	
												15,324							7,871					12,812											
												Labour Portion (%)	80%	50%	50%	60%	60%	50%	50%	80%	60%	60%	50%	50%	50%	70%	70%	70%	70%	70%	70%	40%	50%	20,976	
												Labour Cost (\$ USD)	933	1,499	2,339	692	1,057	409	1,375	513	1,079	964	538	1,375	534	210	2,800	0	748	788	1,750	0	1,375		
												Labour Hours (Based on \$3/Hour)	311	500	780	231	352	136	458	171	360	321	179	458	178	70	933	0	249	263	583	0	458	6,992	
												Voluntary Labour	311	500	780	0	0	0	0	171	360	321	0	0	0	70	933	0	0	0	0	0	0	0	3,445
												Employed or Contract Labour	0	0	0	231	352	136	458	0	0	0	179	458	178	0	0	0	249	263	583	0	458	3,547	
												Labour Savings (Based on \$3/Hour)	-933	-1,499	-2,339	0	0	0	0	-513	-1,079	-964	0	0	0	-210	-2,800	0	0	0	0	0	0	-10,336	
												Adjusted Labour Cost (\$ USD)	0	0	0	692	1,057	409	1,375	0	0	0	538	1,375	534	0	0	0	748	788	1,750	0	1,375	10,640	
												Plant Portion (%)	10%	10%	10%	10%	10%	0%	0%	10%	10%	10%	0%	0%	0%	10%	10%	10%	10%	10%	0%	20%	0%	2,230	
												Plant Cost (\$ USD)	117	300	468	115	176	0	0	64	180	161	0	0	0	30	400	0	107	113	0	0	0		
												Material Portion (%)	10%	40%	40%	30%	30%	50%	50%	10%	30%	30%	50%	50%	50%	20%	20%	20%	20%	20%	30%	40%	50%	12,801	
												Material Cost (\$ USD)	117	1,199	1,871	346	529	409	1,375	64	539	482	538	1,375	534	60	800	0	214	225	750	0	1,375		
												Adjusted Annualised Maint. Budget (\$ USD)	233	1,499	2,339	1,153	1,762	818	2,750	128	719	643	1,075	2,750	1,069	90	1,200	0	1,069	1,125	2,500	0	2,750	25,670	
												10,553							5,315					9,802											



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												Element	Structure							Internal Fit-Out					Services										
												Maintenance Task	Building Wash	External Wall Painting	Protective Coatings to Roof	Wall Cladding Repairs	Roof Cladding Repairs	Door & Window Repairs	Misc Repairs	Floor Finishes Cleaning & Repairs	Internal Wall Painting	Ceiling & Soffit Painting	Internal Door Repairs	Misc Repairs	Fire Suppress. Detection & Alarm Systems	Mechanical Ventilation	A/C Systems	Hot Water Generation	Electrical Services	Hydraulic Services	Comm. Systems	Vertical Transport	Misc Repairs		
												Unit	ft2	ft2	ft2	ft2	ft2	ft2	LS Allow 250.00	ft2	ft2	ft2	No.	LS Allow 250.00	ft2	LS Allow 100.00	No.	LS Allow 500.00	ft2	No.	LS Allow 250.00	LS Allow 2,500.00	LS Allow 250.00		
												Rate/Cost (\$ USD)	0.01	0.65	0.93	0.05	0.05	0.25	250.00	0.03	0.56	0.65	25.00	250.00	0.05	100.00	50.00	500.00	0.05	25.00	250.00	2,500.00	250.00		
												Frequency (Years)	0.50	5.00	7.00	1.00	1.00	1.00	1.00	1.00	12.00	12.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
4.00	National Campus, Palikir, Pohnpei State	124,691	11,584	100,098	9,299	130,619	12,135	24,769	2,301	49,858	4,632	Quantity	230,717	100,098	130,619	100,098	130,619	24,769	34	124,691	199,814	101,023	327	35	124,691	32	153	6	124,691	282	32	1	35		
												Total Cost Per Occurrence (\$ USD)	2,307	65,095	121,348	5,005	6,531	6,192	8,500	3,741	111,379	65,697	8,175	8,750	6,235	3,200	7,650	3,000	6,235	7,050	8,000	2,500	8,750	Total	
												Annualised Maint. Budget (\$ USD)	4,614	13,019	17,335	5,005	6,531	6,192	8,500	3,741	9,282	5,475	8,175	8,750	6,235	3,200	15,300	3,000	6,235	7,050	8,000	2,500	8,750	156,888	
												61,197							35,422					60,269											
												Labour Portion (%)	80%	50%	50%	60%	60%	50%	50%	80%	60%	60%	50%	50%	50%	70%	70%	70%	70%	70%	70%	40%	50%	91,887	
												Labour Cost (\$ USD)	3,691	6,510	8,668	3,003	3,919	3,096	4,250	2,993	5,569	3,285	4,088	4,375	3,117	2,240	10,710	2,100	4,364	4,935	5,600	1,000	4,375	30,629	
												Labour Hours (Based on \$3/Hour)	1,230	2,170	2,889	1,001	1,306	1,032	1,417	998	1,856	1,095	1,363	1,458	1,039	747	3,570	700	1,455	1,645	1,867	333	1,458	14,555	
												Voluntary Labour	1,230	2,170	2,889	0	0	0	0	998	1,856	1,095	0	0	0	747	3,570	0	0	0	0	0	0	0	16,074
												Employed or Contract Labour	0	0	0	1,001	1,306	1,032	1,417	0	0	0	1,363	1,458	1,039	0	0	700	1,455	1,645	1,867	333	1,458	-43,665	
												Labour Savings (Based on \$3/Hour)	-3,691	-6,510	-8,668	0	0	0	0	-2,993	-5,569	-3,285	0	0	0	-2,240	-10,710	0	0	0	0	0	0	0	48,222
												Adjusted Labour Cost (\$ USD)	0	0	0	3,003	3,919	3,096	4,250	0	0	0	4,088	4,375	3,117	0	0	2,100	4,364	4,935	5,600	1,000	4,375		
												Plant Portion (%)	10%	10%	10%	10%	10%	0%	0%	10%	10%	10%	0%	0%	0%	10%	10%	10%	10%	10%	0%	20%	0%	10,479	
												Plant Cost (\$ USD)	461	1,302	1,734	500	653	0	0	374	928	547	0	0	0	320	1,530	300	623	705	0	500	0		
												Material Portion (%)	10%	40%	40%	30%	30%	50%	50%	10%	30%	30%	50%	50%	50%	20%	20%	20%	20%	20%	30%	40%	50%	54,523	
												Material Cost (\$ USD)	461	5,208	6,934	1,501	1,959	3,096	4,250	374	2,784	1,642	4,088	4,375	3,117	640	3,060	600	1,247	1,410	2,400	1,000	4,375		
												Adjusted Annualised Maint. Budget (\$ USD)	923	6,510	8,668	5,005	6,531	6,192	8,500	748	3,713	2,190	8,175	8,750	6,235	960	4,590	3,000	6,235	7,050	8,000	2,500	8,750	113,223	
												42,328							23,576					47,319											



												Element	Structure							Internal Fit-Out					Services											
												Maintenance Task	Building Wash	External Wall Painting	Protective Coatings to Roof	Wall Cladding Repairs	Roof Cladding Repairs	Door & Window Repairs	Misc Repairs	Floor Finishes Cleaning & Repairs	Internal Wall Painting	Ceiling & Soffit Painting	Internal Door Repairs	Misc Repairs	Fire Suppress. Detection & Alarm Systems	Mechanical Ventilation	A/C Systems	Hot Water Generation	Electrical Services	Hydraulic Services	Comm. Systems	Vertical Transport	Misc Repairs			
												Unit	ft2	ft2	ft2	ft2	ft2	ft2	LS Allow 250.00	ft2	ft2	ft2	No.	LS Allow 250.00	ft2	LS Allow 100.00	No.	LS Allow 500.00	ft2	No.	LS Allow 250.00	LS Allow 2,500.00	LS Allow 250.00			
												Rate/Cost (\$ USD)	0.01	0.65	0.93	0.05	0.05	0.25		0.03	0.56	0.65	25.00		0.05		50.00		0.05		25.00		250.00			
												Frequency (Years)	0.50	5.00	7.00	1.00	1.00	1.00	1.00	1.00	12.00	12.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
5.00	Pohnpei Campus, Kolonia, Pohnpei State	Gross Floor Area (GFA)		External Wall Area (EWA)		Roof Area (RA)		Door & Window Area (DWA)		Internal Wall Area (IWA)																										
		ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2																							
		70,087	6,511	62,069	5,766	83,974	7,801	11,829	1,099	37,100	3,447																									
													Quantity	146,043	62,069	83,974	62,069	83,974	11,829	44	70,087	136,268	81,658	107	44	70,087	20	95	3	70,087	117	41	0	41		
													Total Cost Per Occurrence (\$ USD)	1,460	40,364	78,014	3,103	4,199	2,957	11,000	2,103	75,958	53,104	2,675	11,000	3,504	2,000	4,750	1,500	3,504	2,925	10,250	0	10,250		
												Annualised Maint. Budget (\$ USD)	2,921	8,073	11,145	3,103	4,199	2,957	11,000	2,103	6,330	4,425	2,675	11,000	3,504	2,000	9,500	1,500	3,504	2,925	10,250	0	10,250			
												43,398							26,533					43,434										Total		
																																		113,364		
												Labour Portion (%)	80%	50%	50%	60%	60%	50%	50%	80%	60%	60%	50%	50%	50%	70%	70%	70%	70%	70%	70%	40%	50%			
												Labour Cost (\$ USD)	2,337	4,036	5,572	1,862	2,519	1,479	5,500	1,682	3,798	2,655	1,338	5,500	1,752	1,400	6,650	1,050	2,453	2,048	7,175	0	5,125	65,931		
												Labour Hours (Based on \$3/Hour)	779	1,345	1,857	621	840	493	1,833	561	1,266	885	446	1,833	584	467	2,217	350	818	683	2,392	0	1,708	21,977		
												Voluntary Labour	779	1,345	1,857	0	0	0	0	561	1,266	885	0	0	0	467	2,217	0	0	0	0	0	0	0	9,377	
												Employed or Contract Labour	0	0	0	621	840	493	1,833	0	0	0	446	1,833	584	0	0	350	818	683	2,392	0	1,708	12,600		
												Labour Savings (Based on \$3/Hour)	-2,337	-4,036	-5,572	0	0	0	0	-1,682	-3,798	-2,655	0	0	0	-1,400	-6,650	0	0	0	0	0	0	0	-28,131	
												Adjusted Labour Cost (\$ USD)	0	0	0	1,862	2,519	1,479	5,500	0	0	0	1,338	5,500	1,752	0	0	1,050	2,453	2,048	7,175	0	5,125	37,800		
												Plant Portion (%)	10%	10%	10%	10%	10%	0%	0%	10%	10%	10%	0%	0%	0%	10%	10%	10%	10%	10%	10%	0%	20%	0%		
												Plant Cost (\$ USD)	292	807	1,114	310	420	0	0	210	633	443	0	0	0	200	950	150	350	293	0	0	0	0	6,173	
												Material Portion (%)	10%	40%	40%	30%	30%	50%	50%	10%	30%	30%	50%	50%	50%	20%	20%	20%	20%	20%	30%	40%	50%			
												Material Cost (\$ USD)	292	3,229	4,458	931	1,260	1,479	5,500	210	1,899	1,328	1,338	5,500	1,752	400	1,900	300	701	585	3,075	0	5,125	41,261		
												Adjusted Annualised Maint. Budget (\$ USD)	584	4,036	5,572	3,103	4,199	2,957	11,000	421	2,532	1,770	2,675	11,000	3,504	600	2,850	1,500	3,504	2,925	10,250	0	10,250	85,234		
												31,452							18,398					35,384												





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												Element	Structure							Internal Fit-Out					Services									
												Maintenance Task	Building Wash	External Wall Painting	Protective Coatings to Roof	Wall Cladding Repairs	Roof Cladding Repairs	Door & Window Repairs	Misc Repairs	Floor Finishes Cleaning & Repairs	Internal Wall Painting	Ceiling & Soffit Painting	Internal Door Repairs	Misc Repairs	Fire Suppress. Detection & Alarm Systems	Mechanical Ventilation	A/C Systems	Hot Water Generation	Electrical Services	Hydraulic Services	Comm. Systems	Vertical Transport	Misc Repairs	
												Unit	ft2	ft2	ft2	ft2	ft2	ft2	LS Allow	ft2	ft2	ft2	No.	LS Allow	ft2	LS Allow	No.	LS Allow	ft2	No.	LS Allow	LS Allow	LS Allow	
												Rate/Cost (\$ USD)	0.01	0.65	0.93	0.05	0.05	0.25	250.00	0.03	0.56	0.65	25.00	250.00	0.05	100.00	50.00	500.00	0.05	25.00	250.00	2,500.00	250.00	
												Frequency (Years)	0.50	5.00	7.00	1.00	1.00	1.00	1.00	1.00	12.00	12.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00	
6.00	Kosrae Campus, Tofol, Kosrae State																																	
		Gross Floor Area (GFA)		External Wall Area (EWA)		Roof Area (RA)		Door & Window Area (DWA)		Internal Wall Area (IWA)																								
Ref	Building	ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2																							
														Quantity										Total Cost Per Occurrence (\$ USD)										Total
														56,272										563										Total
														22,961										14,932										
														33,311										30,947										
														22,961										1,148										
														33,311										1,666										
														4,569										1,142										
														12										3,000										
														23,401										702										
														33,279										18,550										
														29,439										19,144										
														36										900										
														12										3,000										
														23,401										1,170										
														7										700										
														37										1,850										
														0										0										
														23,401										1,170										
														48										1,200										
														12										3,000										
														0										0										
														3,000										3,000										
														15,489										7,743										
																								13,940										
														Labour Portion (%)										21,684										
														80%										50%										
														50%										60%										
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Ref	Location	Total Buildings	Total Building Area		Total Hard Surface Areas		Total Green Surface Areas		Site Area	
		No.	ft2	m2	ft2	m2	ft2	m2	ft2	m2
1.00	Yap Campus, Ruul, Yap State	9	23,213	2,157	15,426	1,433	266,283	24,738	304,923	28,328

2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	6	22,374	2,079	6,052	562	1,541,891	143,245	1,570,317	145,886
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3.00	Chuuk Campus, Nepukos Weno, Chuuk State	11	21,371	1,985	9,288	863	59,747	5,551	90,407	8,399
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4.00	National Campus, Palikir, Pohnpei State	15	124,691	11,584	323,488	30,053	2,853,895	265,133	3,177,382	295,186
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5.00	Pohnpei Campus, Kolonia, Pohnpei State	17	70,087	6,511	86,161	8,005	644,456	59,871	730,617	67,876
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6.00	Kosrae Campus, Tofol, Kosrae State	11	23,401	2,174	42,718	3,969	344,086	31,966	410,205	38,109
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Maintenance Element	Grounds Keeping	Car Parks, Roads & Pavements	Fences & Gates	Structures	Site Drainage	Electrical Infrastructure	Water Services	Site Furniture	Telecom Services	
OPT1 - Total - Fully Employed Labour Regime Only	3,799	1,457	900	565	1,900	1,900	225	1,000	225	11,971
OPT2 - Total - Combined Employed & Voluntary Labour Regime	1,801	1,457	620	402	1,900	1,900	225	1,000	225	9,531
Total - Cost Saving	(1,997)	0	(280)	(162)	0	0	0	0	0	(2,440)
Total - Voluntary Labour Required (Hours)	666	0	93	54	0	0	0	0	0	813
OPT1 - Total - Fully Employed Labour Regime Only	4,756	3,903	500	643	1,600	1,600	150	1,000	150	14,302
OPT2 - Total - Combined Employed & Voluntary Labour Regime	2,576	3,903	500	433	1,600	1,600	150	1,000	150	11,912
Total - Cost Saving	(2,180)	0	0	(211)	0	0	0	0	0	(2,390)
Total - Voluntary Labour Required (Hours)	727	0	0	70	0	0	0	0	0	797
OPT1 - Total - Fully Employed Labour Regime Only	2,791	1,726	900	498	2,100	2,100	275	1,000	275	11,666
OPT2 - Total - Combined Employed & Voluntary Labour Regime	986	1,726	620	377	2,100	2,100	275	1,000	275	9,459
Total - Cost Saving	(1,806)	0	(280)	(122)	0	0	0	0	0	(2,207)
Total - Voluntary Labour Required (Hours)	602	0	93	41	0	0	0	0	0	736
OPT1 - Total - Fully Employed Labour Regime Only	18,919	19,336	1,800	3,734	2,500	2,500	375	1,000	375	50,539
OPT2 - Total - Combined Employed & Voluntary Labour Regime	12,768	19,336	1,240	2,057	2,500	2,500	375	1,000	375	42,151
Total - Cost Saving	(6,151)	0	(560)	(1,677)	0	0	0	0	0	(8,388)
Total - Voluntary Labour Required (Hours)	2,050	0	187	559	0	0	0	0	0	2,796
OPT1 - Total - Fully Employed Labour Regime Only	8,143	16,228	1,800	2,795	3,700	2,700	425	2,000	425	38,216
OPT2 - Total - Combined Employed & Voluntary Labour Regime	4,045	16,228	1,240	2,121	3,700	2,700	425	2,000	425	32,883
Total - Cost Saving	(4,099)	0	(560)	(674)	0	0	0	0	0	(5,332)
Total - Voluntary Labour Required (Hours)	1,366	0	187	225	0	0	0	0	0	1,777
OPT1 - Total - Fully Employed Labour Regime Only	4,178	7,352	1,400	1,264	2,100	2,100	275	1,000	275	19,944
OPT2 - Total - Combined Employed & Voluntary Labour Regime	2,109	7,352	1,120	672	2,100	2,100	275	1,000	275	17,002
Total - Cost Saving	(2,070)	0	(280)	(592)	0	0	0	0	0	(2,942)
Total - Voluntary Labour Required (Hours)	690	0	93	197	0	0	0	0	0	981
OPT1 - Grand Total - Fully Employed Labour Regime Only	42,587	50,001	7,300	9,499	13,900	12,900	1,725	7,000	1,725	146,638
OPT2 - Grand Total - Combined Employed & Voluntary Labour Regime	24,285	50,001	5,340	6,062	13,900	12,900	1,725	7,000	1,725	122,938
Grand Total - Cost Saving	(18,302)	0	(1,960)	(3,437)	0	0	0	0	0	(23,700)
Grand Total - Voluntary Labour Required (Hours)	6,101	0	653	1,146	0	0	0	0	0	7,900
Cost Saving as %	75%	0%	37%	57%	0%	0%	0%	0%	0%	19%



		Total Buildings		Total Building Area		Total Hard Surface Areas		Total Green Surface Areas		Site Area	
Ref	Location	No.	ft2	m2	ft2	m2	ft2	m2	ft2	m2	
1.00	Yap Campus, Ruul, Yap State	9	23,213	2,157	15,426	1,433	266,283	24,738	304,923	28,328	

Element	Grounds Keeping				Car Parks, Roads & Pavements			Fences & Gates		Structures			Site Drainage			Electrical Infrastructure		Water Services	Site Furniture	Telecom Services
Maintenance Task	Mowing	Spraying	General Grounds Keeping	Pruning & General Tree Maint.	Regrade, Relevel & Compact Gravel Surface	Pot/Crack Fill Asphalt Surface	Pot/Crack Fill Concrete Surface	Repaint Fences & Gates	Fence & Gate Repairs	Minor Building Structures Wash	Minor Building Structures General Repairs	Minor Building Structures Repaint	Site Stormwater Drainage Maint.	Building Stormwater Drainage Maint.	Building Sewer Drainage Maint.	General Electrical Maint.	General Electrical Servicing	General Water Services Maint.	General Site Furniture Maint.	General Telecom Services
Unit	LS Allow / Green Area	LS Allow / Green Area	LS Allow / Green Area	LS Allow.	LS Allow / Area	LS Allow / Area	LS Allow / Area	LS Allow.	LS Allow.	LS Allow / GFA	LS Allow / Building No	LS Allow / GFA	LS Allow / Building	LS Allow / Building	LS Allow / Building	LS Allow / Building	LS Allow	LS Allow / Building	LS Allow / Building	LS Allow / Building
Rate/Cost (\$ USD)	0.00023	0.00012	0.00046	2,500.00	0.28	0.05	0.05	2,000.00	500.00	0.01	100.00	0.65	1,000.00	50.00	50.00	100.00	1,000.00	25.00	1,000.00	25.00
Frequency (Years)	0.08	0.50	0.25	1.00	1.00	1.00	1.00	5.00	1.00	0.50	1.00	5.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Quantity	266,283	266,283	266,283	1	2,460	9,872	5,554	1	1	1,765	3	1,765	1	9	9	9	9	1	9	1	9
Total Cost Per Occurrence (\$ USD)	62	31	124	2,500	686	494	278	2,000	500	18	300	1,148	1,000	450	450	900	1,000	225	1,000	225	
Annualised Maint. Budget (\$ USD)	742	62	495	2,500	686	494	278	400	500	35	300	230	1,000	450	450	900	1,000	225	1,000	225	
				3,799	1,457			900		565			1,900			1,900		225	1,000	225	

Labour Portion (%)	70%	35%	50%	70%	30%	30%	30%	70%	80%	70%	50%	60%	50%	50%	50%	50%	50%	50%	50%	50%
Labour Cost (\$ USD)	520	22	247	1,750	206	148	83	280	400	25	150	138	500	225	225	450	500	113	500	113
Labour Hours (Based on \$3/Hour)	173	7	82	583	69	49	28	93	133	8	50	46	167	75	75	150	167	38	167	38
Voluntary Labour	0	0	82	583	0	0	0	93	0	8	0	46	0	0	0	0	0	0	0	0
Employed or Contract Labour	173	7	0	0	69	49	28	0	133	0	50	0	167	75	75	150	167	38	167	38
Labour Savings (Based on \$3/Hour)	0	0	-247	-1,750	0	0	0	-280	0	-25	0	-138	0	0	0	0	0	0	0	0
Adjusted Labour Cost (\$ USD)	520	22	0	0	206	148	83	0	400	0	150	0	500	225	225	450	500	113	500	113

Plant Portion (%)	30%	30%	25%	30%	50%	50%	50%	0%	0%	20%	20%	10%	30%	30%	30%	30%	30%	30%	0%	30%
Plant Cost (\$ USD)	223	19	124	750	343	247	139	0	0	7	60	23	300	135	135	270	300	68	0	68

Material Portion (%)	0%	35%	25%	0%	20%	20%	20%	30%	20%	10%	30%	30%	20%	20%	20%	20%	20%	20%	50%	20%
Material Cost (\$ USD)	0	22	124	0	137	99	56	120	100	4	90	69	200	90	90	180	200	45	500	45

Adjusted Annualised Maint. Budget (\$ USD)	742	62	247	750	686	494	278	120	500	11	300	92	1,000	450	450	900	1,000	225	1,000	225
				1,801	1,457			620		402			1,900			1,900		225	1,000	225

Total

11,971

6,593

2,198

813

1,384

-2,440

4,153

3,208

2,169

9,531





											Element	Grounds Keeping				Car Parks, Roads & Pavements			Fences & Gates		Structures			Site Drainage			Electrical Infrastructure		Water Services	Site Furniture	Telecom Services										
											Maintenance Task	Mowing	Spraying	General Grounds Keeping	Pruning & General Tree Maint.	Regrade, Relevel & Compact Gravel Surface	Pot/Crack Fill Asphalt Surface	Pot/Crack Fill Concrete Surface	Repaint Fences & Gates	Fence & Gate Repairs	Minor Building Structures Wash	Minor Building Structures General Repairs	Minor Building Structures Repaint	Site Stormwater Drainage Maint.	Building Stormwater Drainage Maint.	Building Sewer Drainage Maint.	General Electrical Maint.	General Electrical Servicing	General Water Services Maint.	General Site Furniture Maint.	General Telecom Services										
											Unit	LS Allow / Green Area	LS Allow / Green Area	LS Allow / Green Area	LS Allow.	LS Allow / Area	LS Allow / Area	LS Allow / Area	LS Allow.	LS Allow.	LS Allow / GFA	LS Allow / Building No	LS Allow / GFA	LS Allow / Building	LS Allow / Building	LS Allow / Building	LS Allow / Building	LS Allow	LS Allow / Building	LS Allow.	LS Allow / Building										
											Rate/Cost (\$ USD)	0.00023	0.00012	0.00046	2,500.00	0.28	0.05	0.05	2,000.00	500.00	0.01	100.00	0.65	1,000.00	50.00	50.00	100.00	1,000.00	25.00	1,000.00	25.00										
											Frequency (Years)	0.08	0.50	0.25	1.00	1.00	1.00	1.00	5.00	1.00	0.50	1.00	5.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00									
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	Total Buildings	Total Building Area		Total Hard Surface Areas		Total Green Surface Areas		Site Area																																
		No.	ft2	m2	ft2	m2	ft2	m2	ft2	m2																															
																					Quantity	59,747	59,747	59,747	1	5,517	0	3,772	1	1	1,322	3	1,322	1	11	11	11	1	11	11	
																					Total Cost Per Occurrence (\$ USD)	14	7	28	2,500	1,538	0	189	2,000	500	13	300	859	1,000	550	550	1,100	1,000	275	1,000	275
																					Annualised Maint. Budget (\$ USD)	167	14	111	2,500	1,538	0	189	400	500	26	300	172	1,000	550	550	1,100	1,000	275	1,000	275
																					2,791				1,726			900		498			2,100			2,100		275	1,000	275	
																					Labour Portion (%)	70%	35%	50%	70%	30%	30%	30%	70%	80%	70%	50%	60%	50%	50%	50%	50%	50%	50%	50%	50%
																					Labour Cost (\$ USD)	117	5	56	1,750	461	0	57	280	400	19	150	103	500	275	275	550	500	138	500	138
																					Labour Hours (Based on \$3/Hour)	39	2	19	583	154	0	19	93	133	6	50	34	167	92	92	183	167	46	167	46
																					Voluntary Labour	0	0	19	583	0	0	0	93	0	6	0	34	0	0	0	0	0	0	0	0
																					Employed or Contract Labour	39	2	0	0	154	0	19	0	133	0	50	0	167	92	92	183	167	46	167	46
																			Labour Savings (Based on \$3/Hour)	0	0	-56	-1,750	0	0	0	-280	0	-19	0	-103	0	0	0	0	0	0	0	0		
																			Adjusted Labour Cost (\$ USD)	117	5	0	0	461	0	57	0	400	0	150	0	500	275	275	550	500	138	500	138		
																			Plant Portion (%)	30%	30%	25%	30%	50%	50%	50%	0%	0%	20%	20%	10%	30%	30%	30%	30%	30%	30%	30%	0%	30%	
																			Plant Cost (\$ USD)	50	4	28	750	769	0	94	0	0	5	60	17	300	165	165	330	300	83	0	83		
																			Material Portion (%)	0%	35%	25%	0%	20%	20%	20%	30%	20%	10%	30%	30%	20%	20%	20%	20%	20%	20%	50%	20%		
																			Material Cost (\$ USD)	0	5	28	0	308	0	38	120	100	3	90	52	200	110	110	220	200	55	500	55		
																			Adjusted Annualised Maint. Budget (\$ USD)	167	14	56	750	1,538	0	189	120	500	8	300	69	1,000	550	550	1,100	1,000	275	1,000	275		
																			986				1,726			620		377			2,100			2,100		275	1,000	275			



											Element		Grounds Keeping				Car Parks, Roads & Pavements			Fences & Gates		Structures			Site Drainage			Electrical Infrastructure		Water Services	Site Furniture	Telecom Services					
											Maintenance Task		Mowing	Spraying	General Grounds Keeping	Pruning & General Tree Maint.	Regrade, Relevel & Compact Gravel Surface	Pot/Crack Fill Asphalt Surface	Pot/Crack Fill Concrete Surface	Repaint Fences & Gates	Fence & Gate Repairs	Minor Building Structures Wash	Minor Building Structures General Repairs	Minor Building Structures Repaint	Site Stormwater Drainage Maint.	Building Stormwater Drainage Maint.	Building Sewer Drainage Maint.	General Electrical Maint.	General Electrical Servicing	General Water Services Maint.	General Site Furniture Maint.	General Telecom Services					
											Unit		LS Allow / Green Area 0.00023	LS Allow / Green Area 0.00012	LS Allow / Green Area 0.00046	LS Allow. 2,500.00	LS Allow / Area 0.28	LS Allow / Area 0.05	LS Allow / Area 0.05	LS Allow. 2,000.00	LS Allow. 500.00	LS Allow / GFA 0.01	LS Allow / GFA 0.65	LS Allow / GFA 0.01	LS Allow. 1,000.00	LS Allow / Building 50.00	LS Allow / Building 50.00	LS Allow / Building 100.00	LS Allow 1,000.00	LS Allow / Building 25.00	LS Allow. 1,000.00	LS Allow / Building 25.00					
											Rate/Cost (\$ USD)		0.08	0.50	0.25	1.00	1.00	1.00	1.00	5.00	1.00	0.50	1.00	5.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
											Frequency (Years)		0.08	0.50	0.25	1.00	1.00	1.00	1.00	5.00	1.00	0.50	1.00	5.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ref	Location		Total Buildings No.	Total Building Area ft2		Total Hard Surface Areas m2		Total Green Surface Areas m2		Site Area ft2		m2																									
4.00	National Campus, Palikir, Pohnpei State		15	124,691	11,584	323,488	30,053	2,853,895	265,133	3,177,382	295,186																										
												Quantity		2,853,895	2,853,895	2,853,895	2	17,590	172,632	116,033	2	2	18,219	10	18,219	1	15	15	15	1	15	15					
												Total Cost Per Occurrence (\$ USD)		663	331	1,326	5,000	4,903	8,632	5,802	4,000	1,000	182	1,000	11,848	1,000	750	750	1,500	1,000	375	1,000	375				
												Annualised Maint. Budget (\$ USD)		7,954	663	5,303	5,000	4,903	8,632	5,802	800	1,000	364	1,000	2,370	1,000	750	750	1,500	1,000	375	1,000	375				
												18,919				19,336				1,800		3,734			2,500			2,500		375	1,000	375					
												70%	35%	50%	70%	30%	30%	30%	70%	80%	70%	50%	60%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
												5,568	232	2,651	3,500	1,471	2,589	1,740	560	800	255	500	1,422	500	375	375	750	500	188	500	188						
												1,856	77	884	1,167	490	863	580	187	267	85	167	474	167	125	125	250	167	63	167	63						
												0	0	884	1,167	0	0	0	187	0	85	0	474	0	0	0	0	0	0	0	0	0	0	0	0	0	0
												1,856	77	0	0	490	863	580	0	267	0	167	0	167	125	125	250	167	63	167	63						
												0	0	-2,651	-3,500	0	0	0	-560	0	-255	0	-1,422	0	0	0	0	0	0	0	0	0	0	0	0	0	
												5,568	232	0	0	1,471	2,589	1,740	0	800	0	500	0	500	375	375	750	500	188	500	188						
												30%	30%	25%	30%	50%	50%	50%	0%	0%	20%	20%	10%	30%	30%	30%	30%	30%	30%	30%	30%	0%	30%				
												2,386	199	1,326	1,500	2,451	4,316	2,901	0	0	73	200	237	300	225	225	450	300	113	0	113						
												0%	35%	25%	0%	20%	20%	20%	30%	20%	10%	30%	30%	20%	20%	20%	20%	20%	20%	20%	50%	20%					
												0	232	1,326	0	981	1,726	1,160	240	200	36	300	711	200	150	150	300	200	75	500	75						
												7,954	663	2,651	1,500	4,903	8,632	5,802	240	1,000	109	1,000	948	1,000	750	750	1,500	1,000	375	1,000	375						
												12,768				19,336				1,240		2,057			2,500			2,500		375	1,000	375					



Overall Project Summary											Detailed Maintenance Schedule & Costs																												
Ref	Location	Total Buildings No.	Total Building Area		Total Hard Surface Areas		Total Green Surface Areas		Site Area		Element	Grounds Keeping				Car Parks, Roads & Pavements			Fences & Gates		Structures				Site Drainage			Electrical Infrastructure		Water Services	Site Furniture	Telecom Services							
			ft2	m2	ft2	m2	ft2	m2	ft2	m2		ft2	m2	Mowing	Spraying	General Grounds Keeping	Pruning & General Tree Maint.	Regrade, Relevel & Compact Gravel Surface	Pot/Crack Fill Asphalt Surface	Pot/Crack Fill Concrete Surface	Repaint Fences & Gates	Fence & Gate Repairs	Minor Building Structures Wash	Minor Building Structures General Repairs	Minor Building Structures Repaint	Site Stormwater Drainage Maint.	Building Stormwater Drainage Maint.	Building Sewer Drainage Maint.	General Electrical Maint.	General Electrical Servicing	General Water Services Maint.	General Site Furniture Maint.	General Telecom Services						
											Unit	LS Allow / Green Area 0.00023	LS Allow / Green Area 0.00012	LS Allow / Green Area 0.00046	LS Allow. 2,500.00	LS Allow / Area 0.28	LS Allow / Area 0.05	LS Allow / Area 0.05	LS Allow. 2,000.00	LS Allow. 500.00	LS Allow / GFA 0.01	LS Allow / GFA 0.01	LS Allow / GFA 0.65	LS Allow. 1,000.00	LS Allow / Building 50.00	LS Allow / Building 50.00	LS Allow / Building 100.00	LS Allow. 1,000.00	LS Allow / Building 25.00	LS Allow. 1,000.00	LS Allow. 25.00	LS Allow / Building 25.00							
											Frequency (Years)	0.08	0.50	0.25	1.00	1.00	1.00	1.00	5.00	1.00	0.50	1.00	5.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
5.00	Pohnpei Campus, Kolonia, Pohnpei State	17	70,087	6,511	86,161	8,005	644,456	59,871	730,617	67,876	Quantity	644,456	644,456	644,456	2	53,975	0	23,687	2	2	8,388	17	7,129	2	17	17	17	1	17	2	17								
											Total Cost Per Occurrence (\$ USD)	150	75	299	5,000	15,043	0	1,184	4,000	1,000	84	1,700	4,636	2,000	850	850	1,700	1,000	425	2,000	425								
											Annualised Maint. Budget (\$ USD)	1,796	150	1,197	5,000	15,043	0	1,184	800	1,000	168	1,700	927	2,000	850	850	1,700	1,000	425	2,000	425								
																					8,143	16,228			1,800		2,795			3,700			2,700		425	2,000	425		
Labour Portion (%)												70%	35%	50%	70%	30%	30%	30%	70%	80%	70%	50%	60%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Labour Cost (\$ USD)												1,257	52	599	3,500	4,513	0	355	560	800	117	850	556	1,000	425	425	850	500	213	1,000	213	17,785							
Labour Hours (Based on \$3/Hour)												419	17	200	1,167	1,504	0	118	187	267	39	283	185	333	142	142	283	167	71	333	71	5,928							
Voluntary Labour												0	0	200	1,167	0	0	0	187	0	39	0	185	0	0	0	0	0	0	0	0	0	1,777						
Employed or Contract Labour												419	17	0	0	1,504	0	118	0	267	0	283	0	333	142	142	283	167	71	333	71	4,151							
Labour Savings (Based on \$3/Hour)												0	0	-599	-3,500	0	0	0	-560	0	-117	0	-556	0	0	0	0	0	0	0	0	0	-5,332						
Adjusted Labour Cost (\$ USD)												1,257	52	0	0	4,513	0	355	0	800	0	850	0	1,000	425	425	850	500	213	1,000	213	12,453							
Plant Portion (%)												30%	30%	25%	30%	50%	50%	50%	0%	0%	20%	20%	10%	30%	30%	30%	30%	30%	30%	0%	30%	13,138							
Plant Cost (\$ USD)												539	45	299	1,500	7,522	0	592	0	0	34	340	93	600	255	255	510	300	128	0	128	13,138							
Material Portion (%)												0%	35%	25%	0%	20%	20%	20%	30%	20%	10%	30%	30%	20%	20%	20%	20%	20%	20%	50%	20%	7,292							
Material Cost (\$ USD)												0	52	299	0	3,009	0	237	240	200	17	510	278	400	170	170	340	200	85	1,000	85	7,292							
Adjusted Annualised Maint. Budget (\$ USD)												1,796	150	599	1,500	15,043	0	1,184	240	1,000	50	1,700	371	2,000	850	850	1,700	1,000	425	2,000	425	32,883							
												4,045				16,228				1,240		2,121				3,700			2,700		425	2,000	425						





											Element	Grounds Keeping				Car Parks, Roads & Pavements			Fences & Gates		Structures				Site Drainage			Electrical Infrastructure		Water Services	Site Furniture	Telecom Services																
											Maintenance Task	Mowing	Spraying	General Grounds Keeping	Pruning & General Tree Maint.	Regrade, Relevel & Compact Gravel Surface	Pot/Crack Fill Asphalt Surface	Pot/Crack Fill Concrete Surface	Repaint Fences & Gates	Fence & Gate Repairs	Minor Building Structures Wash	Minor Building Structures General Repairs	Minor Building Structures Repaint	Site Stormwater Drainage Maint.	Building Stormwater Drainage Maint.	Building Sewer Drainage Maint.	General Electrical Maint.	General Electrical Servicing	General Water Services Maint.	General Site Furniture Maint.	General Telecom Services																	
											Unit	LS Allow / Green Area	LS Allow / Green Area	LS Allow / Green Area	LS Allow.	LS Allow / Area	LS Allow / Area	LS Allow / Area	LS Allow.	LS Allow.	LS Allow / GFA	LS Allow / Building No	LS Allow / GFA	LS Allow / Building	LS Allow / Building	LS Allow / Building	LS Allow / Building	LS Allow	LS Allow / Building	LS Allow.	LS Allow / Building																	
											Rate/Cost (\$ USD)	0.00023	0.00012	0.00046	2,500.00	0.28	0.05	0.05	2,000.00	500.00	0.01	100.00	0.65	1,000.00	50.00	50.00	100.00	1,000.00	25.00	1,000.00	25.00																	
											Frequency (Years)	0.08	0.50	0.25	1.00	1.00	1.00	1.00	5.00	1.00	0.50	1.00	5.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																
6.00	Kosrae Campus, Tofol, Kosrae State	11	23,401	2,174	42,718	3,969	344,086	31,966	410,205	38,109	Quantity	344,086	344,086	344,086	1	24,385	0	11,116	1	2	6,913	3	6,348	1	11	11	11	1	11	1	11																	
											Total Cost Per Occurrence (\$ USD)	80	40	160	2,500	6,796	0	556	2,000	1,000	69	300	4,128	1,000	550	550	1,100	1,000	275	1,000	275																	
											Annualised Maint. Budget (\$ USD)	959	80	639	2,500	6,796	0	556	400	1,000	138	300	826	1,000	550	550	1,100	1,000	275	1,000	275																	
																						4,178				7,352			1,400		1,264			2,100			2,100		275	1,000	275							
											Labour Portion (%)	70%	35%	50%	70%	30%	30%	30%	70%	80%	70%	50%	60%	50%	50%	50%	50%	50%	50%	50%																		
Labour Cost (\$ USD)	671	28	320	1,750	2,039	0	167	280	800	97	150	495	500	275	275	550	500	138	500	138																												
Labour Hours (Based on \$3/Hour)	224	9	107	583	680	0	56	93	267	32	50	165	167	92	92	183	167	46	167	46																												
Voluntary Labour	0	0	107	583	0	0	0	93	0	32	0	165	0	0	0	0	0	0	0	0																												
Employed or Contract Labour	224	9	0	0	680	0	56	0	267	0	50	0	167	92	92	183	167	46	167	46																												
Labour Savings (Based on \$3/Hour)	0	0	-320	-1,750	0	0	0	-280	0	-97	0	-495	0	0	0	0	0	0	0	0																												
Adjusted Labour Cost (\$ USD)	671	28	0	0	2,039	0	167	0	800	0	150	0	500	275	275	550	500	138	500	138																												
											Plant Portion (%)	30%	30%	25%	30%	50%	50%	50%	0%	0%	20%	20%	10%	30%	30%	30%	30%	30%	30%	0%	30%																	
											Plant Cost (\$ USD)	288	24	160	750	3,398	0	278	0	0	28	60	83	300	165	165	330	300	83	0	83																	
											Material Portion (%)	0%	35%	25%	0%	20%	20%	20%	30%	20%	10%	30%	30%	20%	20%	20%	20%	20%	20%	50%	20%																	
											Material Cost (\$ USD)	0	28	160	0	1,359	0	111	120	200	14	90	248	200	110	110	220	200	55	500	55																	
											Adjusted Annualised Maint. Budget (\$ USD)	959	80	320	750	6,796	0	556	120	1,000	41	300	330	1,000	550	550	1,100	1,000	275	1,000	275																	
											2,109				7,352			1,120		672			2,100			2,100		275	1,000	275																		
											Total																			19,944																		

**COLLEGE OF MICRONESIA - FSM**

## MAINTENANCE VS ASSET RENEWALS COST BENEFIT ANALYSIS (BUILDINGS)

June 2013

3 - Draft Version Only



													Element		Structure						Internal Fit-Out				Services																				
													Maintenance Task		Building Wash	External Wall Painting	Protective Coatings to Roof	Wall Cladding Repairs	Roof Cladding Repairs	Door & Window Repairs	Misc Repairs	Floor Finishes Cleaning & Repairs	Internal Wall Painting	Ceiling & Soffit Painting	Internal Door Repairs	Misc Repairs	Fire Supp. Detection & Alarm Systems	Mechanical Ventilation	A/C Systems	Hot Water Generation	Electrical Services	Hydraulic Services	Comm. Systems	Vertical Transport	Misc Repairs										
													Unit		ft2	ft2	ft2	ft2	ft2	ft2	LS Allow 250.00	ft2	ft2	ft2	No.	LS Allow 250.00	ft2	LS Allow 100.00	No.	LS Allow 500.00	ft2	No.	LS Allow 250.00	LS Allow 2,500.00	LS Allow 250.00										
Ref	Building	Buildings	ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2	Rate/Cost (\$ USD)	0.01	0.65	0.93	0.05	0.05	0.25	1.00	0.03	0.56	0.65	25.00	0.05	100.00	50.00	500.00	0.05	25.00	250.00	2,500.00	250.00												
													Frequency (Years)	0.50	5.00	7.00	1.00	1.00	1.00	1.00	1.00	12.00	12.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00													
1.00	Yap Campus, Ruul, Yap State	9	23,213	2,157	20,827	1,935	34,873	3,240	5,349	497	13,256	1,231	Quantity	55,700	20,827	34,873	20,827	34,873	5,349	8	18,469	40,603	18,478	47	7	16,926	14	32	3	18,723	56	6	0	7											
													Total Cost Per Occurrence (\$ USD)	557	13,544	32,397	1,041	1,744	1,337	1,875	554	22,633	12,016	1,175	1,688	846	1,400	1,600	1,500	936	1,400	1,500	0	1,625	Total	33,160									
													Annualised Maint. Budget (\$ USD)	1,114	2,709	4,628	1,041	1,744	1,337	1,875	554	1,886	1,001	1,175	1,688	846	1,400	3,200	1,500	936	1,400	1,500	0	1,625		8.1%									
													14,448						6,304						12,407																				
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	6	22,374	2,079	20,439	1,899	28,856	2,681	3,983	370	16,707	1,552	Quantity	49,295	20,439	28,856	20,439	28,856	3,983	7	22,374	53,853	6,767	73	8	21,454	1	32	0	22,374	54	6	0	9											
													Total Cost Per Occurrence (\$ USD)	493	13,292	26,808	1,022	1,443	996	1,750	671	30,018	4,400	1,825	2,000	1,073	100	1,600	0	1,119	1,350	1,500	0	2,250	Total	30,640									
													Annualised Maint. Budget (\$ USD)	986	2,658	3,830	1,022	1,443	996	1,750	671	2,502	367	1,825	2,000	1,073	100	3,200	0	1,119	1,350	1,500	0	2,250		7.5%									
													12,684						7,364						10,591																				
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	11	21,371	1,985	23,052	2,142	35,242	3,274	3,271	304	7,829	727	Quantity	58,294	23,052	35,242	23,052	35,242	3,271	11	21,371	38,710	29,646	43	11	21,371	3	40	0	21,371	45	10	0	11											
													Total Cost Per Occurrence (\$ USD)	583	14,991	32,741	1,153	1,762	818	2,750	641	21,578	19,280	1,075	2,750	1,069	300	2,000	0	1,069	1,125	2,500	0	2,750	Total	36,007									
													Annualised Maint. Budget (\$ USD)	1,166	2,998	4,677	1,153	1,762	818	2,750	641	1,798	1,607	1,075	2,750	1,069	300	4,000	0	1,069	1,125	2,500	0	2,750		8.8%									
													15,324						7,871						12,812																				
4.00	National Campus, Palikir, Pohnpei State	15	124,691	11,584	100,098	9,299	130,619	12,135	24,769	2,301	49,858	4,632	Quantity	230,717	100,098	130,619	100,098	130,619	24,769	34	124,691	199,814	101,023	327	35	124,691	32	153	6	124,691	282	32	1	35											
													Total Cost Per Occurrence (\$ USD)	2,307	65,095	121,348	5,005	6,531	6,192	8,500	3,741	111,379	65,697	8,175	8,750	6,235	3,200	7,650	3,000	6,235	7,050	8,000	2,500	8,750	Total	156,888									
													Annualised Maint. Budget (\$ USD)	4,614	13,019	17,335	5,005	6,531	6,192	8,500	3,741	9,282	5,475	8,175	8,750	6,235	3,200	15,300	3,000	6,235	7,050	8,000	2,500	8,750		38.5%									
													61,197						35,422						60,269																				
5.00	Pohnpei Campus, Kolonia, Pohnpei State	16	70,087	6,511	62,069	5,766	83,974	7,801	11,829	1,099	37,100	3,447	Quantity	146,043	62,069	83,974	62,069	83,974	11,829	44	70,087	136,268	81,658	107	44	70,087	20	95	3	70,087	117	41	0	41											
													Total Cost Per Occurrence (\$ USD)	1,460	40,364	78,014	3,103	4,199	2,957	11,000	2,103	75,958	53,104	2,675	11,000	3,504	2,000	4,750	1,500	3,504	2,925	10,250	0	10,250	Total	113,364									
													Annualised Maint. Budget (\$ USD)	2,921	8,073	11,145	3,103	4,199	2,957	11,000	2,103	6,330	4,425	2,675	11,000	3,504	2,000	9,500	1,500	3,504	2,925	10,250	0	10,250		27.8%									
													43,398						26,533						43,434																				
6.00	Kosrae Campus, Tofol, Kosrae State	11	23,401	2,174	22,961	2,133	33,311	3,095	4,569	424	5,159	479	Quantity	56,272	22,961	33,311	22,961	33,311	4,569	12	23,401	33,279	29,439	36	12	23,401	7	37	0	23,401	48	12	0	12											
													Total Cost Per Occurrence (\$ USD)	563	14,932	30,947	1,148	1,666	1,142	3,000	702	18,550	19,144	900	3,000	1,170	700	1,850	0	1,170	1,200	3,000	0	3,000	Total	37,172									
													Annualised Maint. Budget (\$ USD)	1,125	2,986	4,421	1,148	1,666	1,142	3,000	702	1,546	1,595	900	3,000	1,170	700	3,700	0	1,170	1,200	3,000	0	3,000		9.1%									
													15,489						7,743						13,940																				
Total													68	285,138	26,490	249,445	23,174	346,876	32,226	53,770	4,995	129,909	12,069	Total Quantity	596,321	249,445	346,876	249,445	346,876	53,770	116	280,394	502,527	267,011	633	117	277,931	77	389	12	280,648	602	107	1	115
													Total Annualised Maint. Budget (\$ USD)	11,926	32,444	46,036	12,472	17,344	13,442	28,875	8,412	23,343	14,470	15,825	29,188	13,897	7,700	38,900	6,000	14,032	15,050	26,750	2,500	28,625	Total	407,231									
													162,540						91,237						153,454						100.0%														

	Maintenance vs Asset Renewals Cost Benefit Analysis																		
	Element	Structure			Internal Fit-Out					Services									
		Building Envelope - External Wall & Roof Cladding	External Windows & Doors	Misc	Floor Finishes	Internal Wall Linings	Ceiling & Soffit Linings	Internal Doors	Misc	Fire Supp. Detection & Alarm Systems	Mechanical Ventilation	A/C Systems	Hot Water Generation	Electrical Services	Hydraulic Services	Comm. Systems	Vertical Transport	Misc	
	Quantity	596,321	53,770	116	280,394	502,527	267,011	633	117	285,138	77	389	12	285,138	602	285,138	1	115	
	Unit Measure	ft2	ft2	No.	ft2	ft2	ft2	No.	No.	ft2	ft2	No.	No.	ft2	No.	ft2	No.	No.	
	Rate	13	90	20,000	11	8	8	1,500	5,000	2	1,000	4,400	5,000	18	3,500	4	65,000	10,000	
	Asset Renewal Cost (Approx. Only for CBA)	7,752,167	4,839,296	2,310,000	3,084,332	4,020,219	2,136,089	949,500	583,750	570,277	77,000	1,711,600	60,000	5,132,490	2,107,000	1,140,553	65,000	1,145,000	37,684,272
Baseline Asset Renewal Cycle	Asset Renewal Cycle (Years)	30	50	30	15	20	20	50	30	20	20	7	30	30	30	20	40	30	
	Asset Renewal Frequency (Over 30 Years)	1.00	0.60	1.00	2.00	1.50	1.50	0.60	1.00	1.50	1.50	4.29	1.00	1.00	1.00	1.50	0.75	1.00	
	Total Asset Renewal Expenditure (Over 30 Years)	7,752,167	2,903,577	2,310,000	6,168,664	6,030,328	3,204,134	569,700	583,750	855,415	115,500	7,335,429	60,000	5,132,490	2,107,000	1,710,830	48,750	1,145,000	48,032,734
	Forecast Extension in Asset Life (Years)	30	20	10	5	10	10	20	10	0	10	5	10	10	10	0	10	10	
Target Asset Renewal Cycle (Deploying Maintenance Regime)	Asset Renewal Cycle (Years)	60	70	40	20	30	30	70	40	20	30	12	40	40	40	20	50	40	
	Asset Renewal Frequency (Over 30 Years)	0.50	0.43	0.75	1.50	1.00	1.00	0.43	0.75	1.50	1.00	2.50	0.75	0.75	0.75	1.50	0.60	0.75	
	Total Asset Renewal Expenditure (Over 30 Years)	3,876,084	2,073,984	1,732,500	4,626,498	4,020,219	2,136,089	406,929	437,813	855,415	77,000	4,279,000	45,000	3,849,367	1,580,250	1,710,830	39,000	858,750	32,604,727
	Asset Renewal Savings	Cost Saving (Over 30 Years)	3,876,084	829,594	577,500	1,542,166	2,010,109	1,068,045	162,771	145,938	0	38,500	3,056,429	15,000	1,283,122	526,750	0	9,750	286,250
Maintenance Regime - Using Fully Employed Labour	Maintenance Cost Expenditure (Over 30 Years)	3,606,675	403,275	866,250	252,354	700,289	434,104	474,750	875,625	416,896	231,000	1,167,000	180,000	420,972	451,500	802,500	75,000	858,750	12,216,941
	Cost Benefit (Over 30 Years)	269,408	426,319	(288,750)	1,289,812	1,309,820	633,941	(311,979)	(729,688)	(416,896)	(192,500)	1,889,429	(165,000)	862,150	75,250	(802,500)	(65,250)	(572,500)	3,211,066

Project: COLLEGE OF MICRONESIA - FSM

Document: **MAINTENANCE VS ASSET RENEWALS COST BENEFIT ANALYSIS (BUILDINGS)**

Audit Date: June 2013

Revision: 3 - Draft Version Only

[illegible]



Summary of Master plan Impacts on Operational Cost Model															Current Estimated Asset Value (Base Assessment)	Estimated Capital Improvements (As Per Master Plan)				Estimated Asset Value (On Completion of MP Projects)			
Ref	Campus	1-10Y Base Operational Cost (\$ USD)	11-20Y Base Operational Cost (\$ USD)	21-30Y Base Operational Cost (\$ USD)	Total 30Y Base Operational Cost (\$ USD)	Base Operational Cost Annualised (\$ USD)	1-10Y Adjusted Operational Cost (\$ USD)	11-20Y Adjusted Operational Cost (\$ USD)	21-30Y Adjusted Operational Cost (\$ USD)	Total 30Y Adjusted Operational Cost On Completion of MP Projects (\$ USD)	Adjusted Operational Cost Annualised (\$ USD)	30Y Operational Cost Variance (\$ USD)	Annualised Operational Cost Variance (\$ USD)	Variance (%)	Estimated Full Replacement Cost of Existing Asset (\$ USD)	When Implemented Period 1 Y1-10	When Implemented Period 2 Y11-20	When Implemented Not Yet Defined	Total Capital Improvements USD	Asset Value after Capital Improvements (\$ USD)	Increase on Asset Value (\$ USD)	Increase on Asset Value (%)	Variance on Asset Value vs Capital Improvements (\$ USD)
1.00	Yap Campus, Ruul, Yap State	1,186,683	1,603,286	2,255,042	5,045,011	168,167	537,613	1,675,972	2,830,383	5,043,968	168,132	-1,043	-35	-0.02%	5,797,414	7,655,000	4,475,000	600,000	12,730,000	16,295,892	10,498,478	181.09%	-2,231,522
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	1,915,988	2,542,092	2,212,369	6,670,450	222,348	1,891,635	2,637,453	2,471,619	7,000,708	233,357	330,257	11,009	4.72%	6,473,690	2,238,000	740,000	1,150,000	4,128,000	10,504,738	4,031,048	62.27%	-96,952
3.00	Chuuk Campus, Nepukos Weno, Chuuk State	1,702,962	1,861,741	2,293,145	5,857,848	195,262	417,130	1,263,625	2,412,375	4,093,130	136,438	-1,764,718	-58,824	-43.11%	5,835,321	24,050,000	0	500,000	24,550,000	30,300,321	24,465,000	419.26%	-85,000
4.00	National Campus, Palikir, Pohnpei State	7,181,838	11,003,654	9,307,913	27,493,404	916,447	7,181,838	11,426,879	10,188,388	28,797,104	959,903	1,303,700	43,457	4.53%	48,669,850	7,975,000	1,000,000	500,000	9,475,000	57,999,850	9,330,000	19.17%	-145,000
5.00	Pohnpei Campus, Kolonia, Pohnpei State	5,931,315	5,389,036	6,988,723	18,309,074	610,302	2,161,034	3,857,886	6,038,343	12,057,263	401,909	-6,251,811	-208,394	-51.85%	19,074,905	6,070,000	5,580,000	820,000	12,470,000	23,897,250	4,822,345	25.28%	-7,647,655
6.00	Kosrae Campus, Tofol, Kosrae State	1,631,210	2,345,998	2,826,665	6,803,873	226,796	1,222,277	2,123,990	2,957,959	6,304,226	210,141	-499,648	-16,655	-7.93%	7,179,222	7,505,000	4,755,000	1,130,000	13,390,000	18,389,272	11,210,051	156.15%	-2,179,949
Total		19,549,997	24,745,807	25,883,857	70,179,661	2,339,322	13,411,527	22,985,805	26,899,067	63,296,398	2,109,880	-6,883,262	-229,442	-10.87%	93,030,402	55,493,000	16,550,000	4,700,000	76,743,000	157,387,323	64,356,922	69.18%	-12,386,078

**Note:** All of the above figures exclude escalation costs, Government taxes and other costs associated with the day-to-day running of campuses (i.e. management, administration and energy costs, etc).



Operational Cost Trends (Note: % Includes Factor Uplift for Maintenance Carried Out Over Period)			Period 1 Year 1-10	Period 2 Year 11-20	Period 3 Year 21-30	
Ref	Building Condition Grade	Definition	% AR & Maint	% AR & Maint	% AR & Maint	Total % AR & Maint
1.00	Condition Grade 1 = Very Good	The building/element is new and is functioning as required.	5.5%	10.5%	29.5%	45.5%
			Minor Spend	Minor Spend	Major Spend	-
2.00	Condition Grade 2 = Good	The building/element is functioning as required.	8.5%	17.5%	34.5%	60.5%
			Minor Spend	Minor Spend	Major Spend	-
3.00	Condition Grade 3 = Average	The building element is approaching the end of its serviceable life but is still functioning as required. Maintenance is required to extend serviceable life.	17.5%	36.5%	21.5%	75.5%
			Minor Spend	Major Spend	Minor Spend	-
4.00	Condition Grade 4 = Poor	The building element is showing signs of failure and deterioration. Extensive maintenance is required or the item should be considered for replacement.	36.5%	31.5%	21.5%	89.5%
			Major Spend	Major Spend	Minor Spend	-
5.00	Condition Grade 5 = Very Poor	The building element has failed and has deteriorated significantly beyond the point of repair. The item must be replaced	51.5%	26.5%	26.5%	104.5%
			Major Spend	Major Spend	Major Spend	-

Ref	Campus	Building	Estimated Full Replacement Cost	Operational Costs (Base Model)			
				Total Year 1-10 Operational Cost (\$ USD)	Total Year 11-20 Operational Cost (\$ USD)	Total Year 21-30 Operational Cost (\$ USD)	Total Operational Cost (\$ USD)
1.00	Yap Campus, Ruul, Yap State	A - Administration Building	828,045	263,441	341,778	397,075	1,002,295
		B - Computer Lab	243,263	47,166	81,026	117,275	245,467
		C - Land Grant Research Lab	512,307	100,943	253,109	139,852	493,705
		D - Science Laboratory	993,389	62,855	99,841	380,363	543,059
		E - Student Centre (New)	860,440	100,872	155,867	322,066	578,805
		F - Classroom Building (New)	1,028,547	94,716	159,984	325,436	580,136
		G - Vocational Education	567,907	338,463	159,010	164,484	661,957
		H - Student Open Lounge	58,828	13,654	3,766	3,450	20,871
		J - Restroom Facility	73,029	9,447	47,128	21,835	78,410
		Site Infrastructure	631,658	155,126	301,776	383,406	840,308
		New Building - Classroom Block	0	0	0	0	0
		New Building - Gymnasium	0	0	0	0	0
		New Building - Administration & Faculty Building	0	0	0	0	0
		New Building - LRC & Computer Lab	0	0	0	0	0
			5,797,414	1,186,683	1,603,286	2,255,042	5,045,011

Proposed Capital Improvements					
Master plan Initiative	Total Capital Improvements (\$ USD)	Asset Value after Capital Improvements (\$ USD)	When Implemented Period 1 Y11-10	When Implemented Period 2 Y11-20	When Implemented Not Yet Defined
10 - Demolish existing administration building	30,000	0	30,000	-	-
2 - Refit computer classroom for combined upward bound and computer lab	20,000	0	20,000	-	-
8 - Demolish computer lab building	30,000		30,000	-	-
12 - New CRE extension to CRE building	670,000	670,000	670,000	-	-
16 - New CRE - Research wing	1,120,000	1,120,000	-	1,120,000	-
None	0	993,389	-	-	-
None	0	860,440	-	-	-
None	0	1,028,547	-	-	-
5 - New VOCED building and maintenance facility	2,460,000	2,460,000	2,460,000	-	-
None	0	58,828	-	-	-
None	0	73,029	-	-	-
1 - Formed paths providing direct connection between buildings through the centre of the campus	65,000	2,141,658	65,000	-	-
3 - Access to boundary carpark - Southern boundary	440,000		440,000	-	-
4 - Fence around German Tower - If required	15,000		15,000	-	-
6 - Create hard court area near Student Services building , 2 study huts and landscaping	40,000		40,000	-	-
7 - Implement a landscape plan across the campus	265,000		265,000	-	-
13 - Relocate basketball hardcourt area	85,000		-	85,000	-
17 - Relocate power poles servicing other properties	50,000		-	-	50,000
18 - Solar power generation	500,000		-	-	500,000
19 - Works to increase drainage capacity - Swales and subsoil drainage	50,000		-	-	50,000
14 - Additional new classroom block between student centre and classroom	1,340,000		-	1,340,000	-
15 - New gymnasium	1,930,000	1,930,000	-	1,930,000	-
9 - New administration and faculty building on computer lab site	1,720,000	1,720,000	1,720,000	-	-
11 - New LRC and computer lab on previous administration site	1,900,000	1,900,000	1,900,000	-	-
Total	12,730,000	16,295,892	7,655,000	4,475,000	600,000

Operational Costs (Adjusted for Capital Improvements)				
Total Adjusted Year 1-10 Operational Cost (\$ USD)	Total Adjusted Year 11-20 Operational Cost (\$ USD)	Total Adjusted Year 21-30 Operational Cost (\$ USD)	Total Adjusted Operational Cost (\$ USD)	Variance from Previous Operational Cost Forecast (\$ USD)
0	0	0	0	-1,002,295
0	0	0	0	-245,467
100,943	351,559	327,602	780,105	286,400
62,855	99,841	380,363	543,059	0
100,872	155,867	322,066	578,805	0
94,716	159,984	325,436	580,136	0
0	135,300	258,300	393,600	-268,357
13,654	3,766	3,450	20,871	0
9,447	47,128	21,835	78,410	0
155,126	343,576	467,881	966,583	126,275
0	73,700	140,700	214,400	214,400
0	106,150	202,650	308,800	308,800
0	94,600	180,600	275,200	275,200
0	104,500	199,500	304,000	304,000
537,613	1,675,972	2,830,383	5,043,968	-1,043



Ref	Campus	Building	Estimated Full Replacement Cost	Operational Costs (Base Model)				Proposed Capital Improvements						Operational Costs (Adjusted for Capital Improvements)					
				Total Year 1-10 Operational Cost (\$ USD)	Total Year 11-20 Operational Cost (\$ USD)	Total Year 21-30 Operational Cost (\$ USD)	Total Operational Cost (\$ USD)	Master plan Initiative	Total Capital Improvements (\$ USD)	Asset Value after Capital Improvements (\$ USD)	When Implemented Period 1 Y1-10	When Implemented Period 2 Y11-20	When Implemented Not Yet Defined	Total Adjusted Year 1-10 Operational Cost (\$ USD)	Total Adjusted Year 11-20 Operational Cost (\$ USD)	Total Adjusted Year 21-30 Operational Cost (\$ USD)	Total Adjusted Operational Cost (\$ USD)	Variance from Previous Operational Cost Forecast (\$ USD)	
2.00	FSM-FMI (Fisheries & Maritime Institute), Gagil, Yap State	A - Administration/Student Services, Residence & Mess Hall	2,952,425	847,932	927,355	1,026,803	2,802,091	3 - Relocate women's quarters into the north eastern end of Administration Building A and add conference room and administration office to area vacated by the residence.	40,000	2,997,425	40,000	-	-	847,932	927,355	1,026,803	2,802,091	0	
		4 - Remove wall between men's and previous women's quarters. Move men's quarters to the north and utilise the southern quarters as library study space	5,000	5,000	-	-													
		None	0	710,218	-	-	-	276,747	145,156		288,316	710,218	0						
		C - Classrooms, Library & Shops	1,229,618	340,176	316,988	503,529	1,160,692	5 - Increase computer room to incorporate former library space in Building C	3,000	1,577,618	3,000	-	-	340,176	336,128	540,069	1,216,372	55,680	
		6 - Separate server room from IT office (within existing building envelope)	20,000	20,000	-	-													
		7 - Provide covered access over classroom doors to Building C, new cadet toilet block next to Seaman's shelter and rationalise location of the access path	60,000	60,000	-	-													
		12 - Improve shop areas by constructing a stand alone engineering shop area	265,000	265,000	-	-													
		D - Maintenance	71,150	31,969	25,675	31,200	88,844	None	0	71,150	-	-	-	31,969	25,675	31,200	88,844	0	
		E - Shower House	116,330	42,180	38,431	46,636	127,247	None	0	116,330	-	-	-	42,180	38,431	46,636	127,247	0	
		F - Security Post	54,973	24,353	25,254	14,866	64,473	13 - New security post	30,000	30,000	30,000	-	-	0	1,650	3,150	4,800	-59,673	
		Site Infrastructure	1,296,997	352,632	1,063,233	301,020	1,716,885	1 - Address provision of fire fighting facilities	165,000	3,696,997	165,000	-	-	352,632	1,091,283	398,420	1,842,335	125,450	
		8 - Upgrade below ground services - drainage and water supply	200,000	200,000	-	-													
		9 - Storage for maintenance materials (potentially a container type facility)	10,000	10,000	-	-													
		10 - Address the current sewage system and leaching field	135,000	135,000	-	-													
		14 - Covered recreation area (over basketball court) for drills	740,000	-	740,000	-													
		15 - Work with State Government to investigate rerouting the main road to the south of the classroom Building C	200,000	-	-	200,000													
		16 - Provide facility for on site water supply	350,000	-	-	350,000													
		17 - Solar power generation	500,000	-	-	500,000													
		18 - Works to increase drainage capacity - swales and subsoil drainage	100,000	-	-	100,000													
		New Building - Duplex Residence	0	0	0	0	0	2 - New duplex residence for instructors in the residential zone	840,000	840,000	840,000	-	-	0	46,200	88,200	134,400	134,400	
		New Building - Classroom / Study Space	0	0	0	0	0	11 - New classroom/ study space with covered access connecting to residential quarters	465,000	465,000	465,000	-	-	0	25,575	48,825	74,400	74,400	
			6,473,690		1,915,988	2,542,092	2,212,369	6,670,450	Total	4,128,000	10,504,738	2,238,000	740,000	1,150,000	1,891,635	2,637,453	2,471,619	7,000,708	330,257



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3.00	Chuuk Campus, Nepukos Weno, Chuuk State	A - Faculty Office (A - Admin/Faculty Office)	790,310	186,237	349,695	260,457	796,389	9 - Staff lounge - meeting place for all faculty - review classroom/ faculty space and consider conversion of one faculty	5,000	795,310	5,000	-	-	49,691	0	0	49,691	-746,698		
		B - Classroom (B Classroom Building B)	673,750	79,529	148,080	347,200	574,809	3 - Retrofit a classroom with a science bench and plumbing	80,000	673,750	80,000	-	-	36,435	0	0	36,435	-538,374		
								8 - Meeting room for student body meetings - review classroom use and retrofit within existing building footprint	5,000		5,000	-	-							
								10 - Conference space set up with conferencing remote learning - review classroom utilization and convert classroom space to new function	Excl. Assumed Sep Budget		Excl. Assumed Sep Budget	-	-							
		C - MITC & Classroom (C - Classroom Building C)	552,668	80,444	163,288	235,304	479,036	None	0	552,668	-	-	-	31,990	0	0	31,990	-447,046		
		D - Computer Lab (I - Computer Lab)	427,093	93,767	143,618	122,519	359,903	None	0	427,093	-	-	-	25,708	0	0	25,708	-334,196		
		E - Library Building (K - Learning Resources Centre)	422,535	76,749	163,709	119,200	359,658	None	0	422,535	-	-	-	27,414	0	0	27,414	-332,245		
		F - Counselling Center (F - CRE Building)	372,223	69,011	89,291	201,090	359,392	6 - Extend CRE - extension building to main road	520,000	892,223	520,000	-	-	27,318	0	0	27,318	-332,075		
		G - Research Lab (J - Student Centre)	496,555	166,683	217,496	209,299	593,478	4 - Re-roof student covered area and add roof ventilation	See Asset Renewals	496,555	See Asset Renewals	-	-	34,843	0	0	34,843	-558,636		
		H - Student Support Services (H - Student Services Building)	371,451	125,671	127,792	88,863	342,325	None	0	371,451	-	-	-	24,316	0	0	24,316	-318,009		
		I - Directors Office (D - Campus Deans Office)	264,636	76,717	109,477	142,762	328,957	None	0	264,636	-	-	-	21,613	0	0	21,613	-307,344		
		J - Restroom Facility (E - Restroom Facility)	192,464	17,276	95,800	34,447	147,523	None	0	192,464	-	-	-	15,120	0	0	15,120	-132,403		
		M - Midtown (Off Campus)	364,796	339,652	23,555	125,159	488,366	None	0	364,796	-	-	-	20,606	0	0	20,606	-467,760		
		Site Infrastructure	906,841	391,226	229,939	406,845	1,028,011	1 - Extend campus to the north, fence perimeter and create a coral base carpark area with an entry and exit onto the main road	210,000	1,236,841	210,000	-	-	102,078	0	0	102,078	-925,933		
								2 - Restrict cars to campus, designate carpark area for visitors, create a central grassed area, 2 study huts on the coastal edge	100,000		100,000	-	-							
								5 - Upgrade wi fi	Excl. Assumed Sep Budget		Excl. Assumed Sep Budget	-	-							
								7 - Landscaping (continuous line of hedges) along the road frontage and upgrade signage	20,000		20,000	-	-							
	Nantaku Site, Chuuk	New Building - 1, 2, 3 Two Level Admin & Classrooms	0	0	0	0	0	14 - Building 1, 2 and 3 - Two level administration and classroom buildings and associated landscaping	10,575,000	10,575,000	10,575,000	-	-	0	581,625	1,110,375	1,692,000	1,692,000		
		New Building - 4 CRE Research Building	0	0	0	0	0	15 - Building 4 - CRE - Research building	1,160,000	1,160,000	1,160,000	-	-	0	63,800	121,800	185,600	185,600		
		New Building - 5 Maintenance Building	0	0	0	0	0	16 - Building 5 - Maintenance building (at top of the site)	205,000	205,000	205,000	-	-	0	11,275	21,525	32,800	32,800		
		New Building - 6 Two Level Classroom Building	0	0	0	0	0	17 - Building 6 - two level classroom building dependent on roll number increase	4,235,000	4,235,000	4,235,000	-	-	0	232,925	444,675	677,600	677,600		
		Site Infrastructure	0	0	0	0	0	11 - Road connection to site	2,300,000	7,435,000	2,300,000	-	-	0	374,000	714,000	1,088,000	1,088,000		
								12 - Site infrastructure services - water supply, site drainage, sewage disposal, electricity	3,250,000		3,250,000	-	-							
								13 - On site roading infrastructure and form basketball hardcourt area	1,250,000		1,250,000	-	-							
								18 - Associated landscaping (for Building 6)	135,000		135,000	-	-							
								18 - Solar power generation	500,000		-	-	500,000							
					5,835,321	1,702,962	1,861,741	2,293,145	5,857,848	Total	24,550,000	30,300,321	24,050,000	0	500,000	417,130	1,263,625	2,412,375	4,093,130	-1,764,718





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4.00	National Campus, Palikir, Pohnpei State	A - Classroom	2,022,463	338,170	790,688	410,833	1,539,691	4 - Rationalize the science storage space to include project space through replanning layout of the existing space	50,000	2,022,463	50,000	-	-	338,170	790,688	410,833	1,539,691	0	
		B - Classroom	1,982,193	221,795	564,681	316,556	1,103,032	None	0	1,982,193	-	-	-	221,795	564,681	316,556	1,103,032	0	
		C - Cafeteria	1,759,997	322,478	486,245	455,716	1,264,439	13 - Remove offices on the side of the dining hall and increase dining hall space	20,000	1,759,997	20,000	-	-	322,478	486,245	455,716	1,264,439	0	
		D - Male Residence Hall	2,933,255	267,033	450,049	551,914	1,268,996	None	0	2,933,255	-	-	-	267,033	450,049	551,914	1,268,996	0	
		E - Female Residence Hall	2,413,721	212,716	402,972	451,957	1,067,645	None	0	2,413,721	-	-	-	212,716	402,972	451,957	1,067,645	0	
		F - Faculty Office	1,172,080	206,803	294,459	373,237	874,499	None	0	1,172,080	-	-	-	206,803	294,459	373,237	874,499	0	
		F2 - Faculty Office	1,204,613	142,413	595,879	414,515	1,152,807	None	0	1,204,613	-	-	-	142,413	595,879	414,515	1,152,807	0	
		G - Administration	2,479,132	471,107	642,461	674,886	1,788,453	5 - Rationalize the administration area through the review of area used for storage of files and alternative means of storage - moveable shelving, digitized files	50,000	2,479,132	50,000	-	-	471,107	642,461	674,886	1,788,453	0	
		H - Learning Resource Centre	3,409,263	634,907	1,727,111	901,060	3,263,078	1 - Secure IT facilities with server room and backup area	40,000	3,484,263	40,000	-	-	634,907	1,731,236	908,935	3,275,078	12,000	
		I - Agriculture	763,190	206,953	185,196	174,012	566,161	3 - Toilets at MITC building - replace darkroom area with wc facilities accessible for weekend use	35,000	3,484,263	35,000	-	-	206,953	185,196	174,012	566,161	0	
		J - A+ Centre	660,973	112,301	249,323	257,283	618,907	None	0		-	-	-	112,301	332,373	415,833	860,507	241,600	
		K - Student Services	757,576	137,092	364,545	213,581	715,218	2 - Public community health interface building (extension)	1,510,000	2,170,973	1,510,000	-	-	137,092	364,545	213,581	715,218	0	
		L - Gymnasium	9,442,394	2,218,838	2,464,238	587,104	5,270,180	9 - Relocate security within the campus (previous bookstore area)	5,000	757,576	5,000	-	-	137,092	364,545	213,581	715,218	0	
								6 - Upgrade the gymnasium building to provide facilities required for next 10 years - i.e. space cooling, water storage, solar panels	400,000	9,842,394	400,000	-	-	2,218,838	2,486,238	629,104	5,334,180	64,000	
		M - Security, Maintenance, Bookstore & IT	819,164	218,177	334,722	175,925	728,823	8 - Consolidate bookstore and bookstore warehouse area	20,000	819,164	20,000	-	-	218,177	334,722	175,925	728,823	0	
		N - Maintenance Shop, Offices & Music Rooms	786,636	206,238	328,173	143,585	677,996	None	0	786,636	-	-	-	206,238	328,173	143,585	677,996	0	
		Site Infrastructure	16,063,199	1,264,817	1,122,912	3,205,750	5,593,479	7 - Increase disabled access across the site - access to both administration levels	170,000	18,348,199	170,000	-	-	1,264,817	1,158,662	3,346,500	5,769,979	176,500	
								10 - Provide a covered pick up/ drop off space for taxis/ buses at main entry	20,000		20,000	-	-						
								12 - Landscape work, paths in connection with the new student services building	265,000		265,000	-	-						
								14 - Combined covered area for residential students	115,000		115,000	-	-						
								15 - Full outdoor Basketball court	80,000		80,000	-	-						
								15A - New sewerage leaching field	135,000		135,000	-	-						
								18 - Track and field / baseball facility including associated vehicle access and parking as well as pedestrian access	1,000,000		-	1,000,000	-						
								19 - Solar power generation	500,000		-	-	500,000						
								11 - New two level student services building	2,910,000	2,910,000	2,910,000	-	-	0	160,050	305,550	465,600	465,600	
								16 - Quiet contemplation place for residential students - pastoral care	50,000	50,000	50,000	-	-	0	2,750	5,250	8,000	8,000	
								17 - Marine science/ applied research building adjacent to the agriculture building	2,100,000	2,100,000	2,100,000	-	-	0	115,500	220,500	336,000	336,000	
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5.00	Pohnpei Campus, Kolonia, Pohnpei State	A - Administration Building (A - Administration Building)	1,088,205	338,960	442,305	612,858	1,394,123	18 - Demolish administration building	30,000	0	-	30,000	-	0	0	0	0	-1,394,123	
		B - HTM Classroom (H - Hotel and Tourism Building)	755,156	148,759	226,666	397,306	772,731	None	0	755,156	-	-	-	148,759	226,666	397,306	772,731	0	
		D - Elect. Class. 8 & 9, Maths/Science Office (C - I.C. Building/Elect. Class.)	716,125	260,749	305,988	276,629	843,366	None	0	716,125	-	-	-	260,749	305,988	276,629	843,366	0	
		E - Classroom 1 - 4 (D - Classroom Building A)	1,383,281	394,047	353,635	621,874	1,369,555	None	0	1,383,281	-	-	-	394,047	353,635	621,874	1,369,555	0	
		F - Classroom 5 - 7 (J - Classroom Building B)	482,528	84,585	163,505	137,148	385,238	None	0	482,528	-	-	-	84,585	163,505	137,148	385,238	0	
		G - Bookstore (B - Book Store)	272,280	97,770	52,410	169,856	320,035	11 - Demolish bookstore	30,000	0	30,000	-	-	-	0	0	0	0	-320,035
		H - Security Post (P - Security Shed)	36,946	27,684	15,424	17,385	60,493	None	0	36,946	-	-	-	27,684	15,424	17,385	60,493	0	
		I - IT Shop (I - IT Shop)	135,031	48,676	32,597	68,715	149,988	None	0	135,031	-	-	-	48,676	32,597	68,715	149,988	0	
		J - UB & TSP (K - Vocational Classrooms, TSP, UB, CES)	3,252,698	2,904,175	844,597	466,297	4,215,069	3 - Demolish Building K	100,000	0	100,000	-	-	-	0	0	0	0	-4,215,069
		K - PSBDC Building (O - PSBDC Building)	3,661,355	306,494	1,057,249	1,172,699	2,536,442	2 - Relocate building K functions (TRIO program) to top floor of PSBDC	5,000	2,536,442	5,000	-	-	306,494	1,057,249	1,172,699	2,536,442	0	
							15 - Relocate Land Grant to top floor of PSBDC; re-landscape front of PSBDC	175,000	175,000		-	-							
		L - Electrical Shop (E - Electrical Building)	492,770	91,328	80,140	202,264	373,731	4 - Demolish the electronics building	20,000	0	20,000	-	-	0	0	0	0	-373,731	
		M - Maintenance Shop (R - Maintenance Building)	225,275	46,663	69,953	140,324	256,940	None	0	225,275	-	-	-	46,663	69,953	140,324	256,940	0	
		N - Gymnasium (G - Gymnasium)	2,075,468	149,301	375,299	754,334	1,278,934	None	0	2,075,468	-	-	-	149,301	375,299	754,334	1,278,934	0	
		N - Student Services Centre (L - Student Services Centre)	1,229,054	276,068	305,802	360,913	942,783	None	0	1,229,054	-	-	-	276,068	305,802	360,913	942,783	0	
		P - Mechanic Shop, Mechanic Store & AC Training Room (M - Mechanic Shop)	594,313	197,076	216,415	182,399	595,889	13 - Demolish mechanical building	Included below	0	Included below	-	-	0	0	0	0	-595,889	
		Q - Carpentry Shops & Classrooms (F - Carpentry Shop)	824,324	140,972	209,334	221,507	571,813	13 - Demolish carpentry building	30,000	0	30,000	-	-	0	0	0	0	-571,813	
		Site Infrastructure	1,850,095	418,008	637,718	1,186,217	2,241,943	1 - Create a vehicle route through the campus for service access and service with fire hydrants, consider demolition of end of classroom building to route access around existing mahogany trees. Seating areas for small group or individual study.	280,000	4,641,943	280,000	-	-	418,008	687,218	1,318,117	2,423,343	181,400	
							7 - Wifi connectivity	Excl. Assumed Sep Budget 320,000			Excl. Assumed Sep Budget 320,000	-	-						
							8 - Site works associated with the new technical education buildings including rationalizing vehicle access, parking lot, signage, pedestrian connections, perimeter and structured planting	320,000			320,000	-	-						
							9 - Create a public face for the upper campus with new signage and entry points	25,000			25,000	-	-						
							12 - Walkway connecting high level buildings to lower level access road, access route from elementary school to top of the site as an alternative access	275,000			275,000	-	-						
							16 - Turn around area in front of administration with a one way entry and exit	50,000			-	50,000	-						
							19 - Increased carpark area in the lower campus and landscaped small study area, outdoor volleyball area, eating space	630,000			-	630,000	-						
							20 - Solar power generation	500,000			-	-	500,000						
							21 - Works to increase drainage capacity - swales and subsoil drainage	150,000			-	-	150,000						
							22 - Fire fighting hydrants through site	170,000			-	-	170,000						

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6.00	Kosrae Campus, Tofol, Kosrae State	A - Administration (A - Administration Building/Classrooms)	891,039	222,565	343,335	476,343	1,042,244	1 - IT server in a secure environment in the existing administration building	40,000	0	40,000	-	-	0	0	0	0	-1,042,244
								12B - Demolish administration building	See Site Infrastructure		See Site Infrastructure	-	-					
		B - Land Library & Voced Classrooms (J - Learning Res. & Career Dev.)	1,288,460	216,758	436,625	352,108	1,005,491	7 - Relocate carpentry and other voced functions to eastern end of Block J away from the main entry and LRC and retrofit space to faculty and/ or administration functions	30,000	1,288,460	30,000	-	-	216,758	436,625	352,108	1,005,491	0
								8 - Demolition of the toilet block at the eastern end of Classroom Building J	5,000		5,000	-	-					
								12A - Relocation and fitout of specialized science classroom and general classroom into Block J	See Site Infrastructure		See Site Infrastructure	-	-					
		C - Land Grant Office (B - Land Grant Building)	474,369	200,085	92,702	186,607	479,394	18 - Demo Building for New Learning Resource Center and associated landscape works, pedestrian connections	See New Buildings	0	-	See New Buildings	-	200,085	0	0	200,085	-279,309
		D - Bookstore (I - Bookstore)	109,125	35,549	33,242	30,617	99,408	10 - Demolition of Bookstore Building I and provide for a landscaped area (either active or passive recreation)	See Site Infrastructure	0	See Site Infrastructure	-	-	0	0	0	0	-99,408
		E - Small Business Development Centre (H - KSBDC Building)	1,454,607	205,140	359,566	511,488	1,076,194	None	0	1,454,607	-	-	-	205,140	359,566	511,488	1,076,194	0
		F - Faculty Office (C - Faculty Building)	435,968	101,674	90,557	126,006	318,236	9 - Demolition of Faculty Building C and upgrade surrounding vehicle access and carpark	See Site Infrastructure	0	See Site Infrastructure	-	-	0	0	0	0	-318,236
		G - Maintenance Shop (F - Maintenance Shop)	60,386	4,280	37,490	6,083	47,852	15 - Demolish existing maintenance office and building - landscape works along the streamside	See Site Infrastructure	0	See Site Infrastructure	-	-	0	0	0	0	-47,852
		H - Maintenance Office (G - Maintenance Office)	134,062	44,866	33,331	84,726	162,923	15 - Demolish existing maintenance office and building - landscape works along the streamside	See Site Infrastructure	0	See Site Infrastructure	-	-	0	0	0	0	-162,923
		I - Former Library - Rose Mackwelung Building (D - Rose Mackwelung Library)	445,748	97,302	170,344	250,099	517,745	None	0	445,748	-	-	-	97,302	170,344	250,099	517,745	0
		Research Lab (Off Camp)	474,474	63,923	179,500	164,176	407,598	None	0	474,474	-	-	-	63,923	179,500	164,176	407,598	0
		Toilet Block (attached to Lab Building Off Camp)	191,197	39,170	42,599	87,648	169,417	None	0	191,197	-	-	-	39,170	42,599	87,648	169,417	0
		Site Infrastructure	1,219,786	399,899	526,706	550,765	1,477,371	2 - Upgraded Wifi	Excl. Assumed Sep Budget	5,479,786	Excl. Assumed Sep Budget	-	-	399,899	668,056	851,415	1,919,371	442,000
								3 - Open side shelters for charging electronics and outdoor study (4 off)	40,000		40,000	-	-					
								5 - Site works associated with multifunctional entry building - carpark, streamside works along the length of the new building , landscaping, signage, pedestrian connections, perimeter and structured planting	560,000		560,000	-	-					
								6 - Recreational area - outdoor basketball/ volleyball space and associated landscape works	150,000		150,000	-	-					
								9 - Demolition of Faculty Building C and upgrade surrounding vehicle access and carpark	290,000		290,000	-	-					
								10 - Demolition of Bookstore Building I and provide for a landscaped area (either active or passive recreation)	110,000		110,000	-	-					
								12A, B & C - Relocation and fitout of specialized science classroom and general classroom into Block J. Demolish old specialized science classroom and landscape area left behind with trees and study huts	220,000		220,000	-	-					
								13 - Pedestrian bridge across to southern streamside bank and level area for covered open sided multipurpose drama/ recreation space - ability to seat up to 300	1,050,000		1,050,000	-	-					
								15 - Demolish existing maintenance office and building - landscape works along the streamside	150,000		150,000	-	-					
								18 - Associated landscaping with the LRC - paths, shrubs, seating	560,000		-	560,000	-					
								20 - Provide facility for on site water supply	530,000		-	-	530,000					
								21 - Solar power generation	500,000		-	-	500,000					
								22 - Investigate and reroute power lines across the site	50,000		-	-	50,000					
								23 - Works to increase drainage capacity - swales and subsoil drainage	50,000		-	-	50,000					
								4 - Consolidate student services functions in a multifunctional building - stage 1 two storey building	3,345,000	3,345,000	3,345,000	-	-	0	183,975	351,225	535,200	535,200
								11 - Stage 2 of the entry multipurpose building with faculty and administration functions added to building	1,130,000	1,130,000	1,130,000	-	-	0	62,150	118,650	180,800	180,800
								14 - New storage and maintenance building	385,000	385,000	385,000	-	-	0	21,175	40,425	61,600	61,600
								16 - New CRE - extension building (building 3) either at research building site or in the community interface activity zone (2 storey)	1,670,000	1,670,000	-	1,670,000	-	0	0	91,850	91,850	91,850
								17 - New Learning Resource Center (building 4) and associated landscape works, pedestrian connections (2 storey)	2,525,000	2,525,000	-	2,525,000	-	0	0	138,875	138,875	138,875
																	0	0
								Total	13,390,000	18,389,272	7,505,000	4,755,000	1,130,000	1,222,277	2,123,990	2,957,959	6,304,226	-499,648
			93,030,402	19,549,997	24,745,807	25,883,857	70,179,661	Grand Total	76,743,000	157,387,323	55,493,000	16,550,000	4,700,000	13,411,527	22,985,805	26,899,067	63,296,398	-6,883,262

## Appendix E

# Spatial Utilization and Facilities Master Plan Study Rough Order of Cost Estimates

Click here and  
then click  
'insert picture'

COM-FSM Space Utilization and Facilities Study Rough Order of Cost Estimate Summary - All Campuses (November 2013)		Buildings, Services & Siteworks	Allowance for Fit-out \$USD (2013 cost)	TOTAL \$USD (2013 cost)	Allowance for Escalation (3.4% pa)	TOTAL Escalated Cost \$USD
All Projects						
a	These are 'rough order of cost' estimates based on highly conceptual information and have an accuracy range that is no better than +/-20%. All estimates need to be confirmed prior to funding application & construction					
b	Fit-out costs (desks, chairs & loose furniture only) assumed at \$10/ft2					
c	No allowance for data projectors, screens, computers, printers, photo-copiers etc					
d	Architectural & Engineering fees and contingency allowances have been included					
e	Escalation has been assumed at the rate of 3.4% per annum. November 2013 has been used as the base date for escalation.					
f	Property purchase or leasing costs are excluded					
g	Taxes, duties and fees are excluded on all projects					
CoM (all Campuses) 5 year period to 2018						
Yap	3,205,000	100,000	3,305,000	137,000	3,442,000	
FSM - FMI	1,438,000	40,000	1,478,000	60,000	1,538,000	
Chuuk	19,035,000	645,000	19,680,000	799,000	20,479,000	
National	5,665,000	160,000	5,825,000	238,000	6,063,000	
Pohnpei	4,955,000	145,000	5,100,000	225,000	5,325,000	
Kosrae	4,450,000	120,000	4,570,000	175,000	4,745,000	
TOTAL CoM (All Campuses) 5 Year Period to 2018	38,748,000	1,210,000	39,958,000	1,634,000	41,592,000	
CoM (All Campuses) 10 year vision (2019 to 2023)						
Yap	4,120,000	230,000	4,350,000	214,000	4,564,000	
FSM - FMI	725,000	35,000	760,000	37,000	797,000	
Chuuk	4,235,000	135,000	4,370,000	205,000	4,575,000	
National	2,075,000	75,000	2,150,000	102,000	2,252,000	
Pohnpei	945,000	25,000	970,000	46,000	1,016,000	
Kosrae	2,880,000	55,000	2,935,000	145,000	3,080,000	
TOTAL All Campuses - 10 year vision (2019 to 2023)	14,980,000	555,000	15,535,000	749,000	16,284,000	
CoM (All Campuses) Long term vision (Beyond 2023)						
Yap	4,375,000	100,000	4,475,000	215,000	4,690,000	
FSM - FMI	740,000	0	740,000	35,000	775,000	
Chuuk	0	0	0	0	0	
National	1,000,000	0	1,000,000	50,000	1,050,000	
Pohnpei	5,410,000	170,000	5,580,000	265,000	5,845,000	
Kosrae	4,555,000	200,000	4,755,000	231,000	4,986,000	
TOTAL All Campuses - Long Term Vision (Beyond 2023)	16,080,000	470,000	16,550,000	796,000	17,346,000	
CoM (All Campuses) Further Projects						
Yap	600,000	0	600,000	35,000	635,000	
FSM - FMI	1,150,000	0	1,150,000	55,000	1,205,000	
Chuuk	500,000	0	500,000	25,000	525,000	
National	500,000	0	500,000	25,000	525,000	
Pohnpei	820,000	0	820,000	50,000	870,000	
Kosrae	1,130,000	0	1,130,000	55,000	1,185,000	
TOTAL CoM (All Campuses) Future Projects	4,700,000	0	4,700,000	245,000	4,945,000	
GRAND TOTAL (All Campuses)	74,508,000	2,235,000	76,743,000	3,424,000	80,167,000	

COM-FSM Space Utilization and Facilities Study Rough Order of Cost Estimate Summary - Yap Campus (November 2013)		Limitations, Assumptions, Inclusions & Exclusions	Unit	Quantity	Rate \$USD	Buildings, Services & Siteworks \$USD (2013 cost)	Allowance for Fit- out \$USD (2013 cost)	TOTAL \$USD (2013 cost)	Allowance for Escalation (3.4% pa)	TOTAL Escalated Cost \$USD
All Projects										
a	These are 'rough order of cost' estimates based on highly conceptual information and have an accuracy range that is no better than +/-20%. All estimates need to be confirmed prior to funding application & construction									
b	Fit-out costs (desks, chairs & loose furniture only) assumed at \$10/ft2									
c	No allowance for data projectors, screens, computers, printers, photo-copiers etc									
d	Architectural & Engineering fees and contingency allowances have been included									
e	Escalation has been assumed at the rate of 3.4% per annum. November 2013 has been used as the base date for escalation.									
f	Property purchase or leasing costs are excluded									
g	Taxes, duties and fees are excluded on all projects									
Yap 5 year period to 2018										
1	Formed paths providing direct connection between buildings through the centre of the campus	Assume 10ft wide concrete path (uncovered)		700		65,000	0	65,000	3,000	68,000
				10ft wide concrete path & uncovered walkway	ft	700	69	48,018		
				A & E allowance	%	48,018	0.15	7,203		
				Sub-total				55,221		
				Contingency allowance	%	55,221	0.15	8,283		
				Rounding				1,496		
				Total Formed Paths				65,000		
2	Refit computer classroom for combined upward bound and computer lab	Assume nominal wall change only. Allow \$20K including fees & contingency				20,000	0	20,000	1,000	21,000
3	Access to boundary carpark - southern boundary					440,000	0	440,000	20,000	460,000
	Carparks	No		40	3,500	140,000	-			
	Additional pavement area	ft2		7,100	11	78,102				
	Entry & Exit crossings	No		1	5,000	5,000	-			
	Footpaths assume 5ft wide	ft		500	20	10,000	-			
	Kerb & channel	ft		1,000	15	15,244				
	Allowance for drainage to car park	LS		1	20,000	20,000	-			
	Allowance for additional earthworks	LS		1	20,000	20,000	-			
	Allowance for perimeter fencing	ft		500	50	25,000				
	Allowance for carpark lighting	No		4	5,000	20,000	-			
						333,346				
	A & E allowance	%		333,346	0.15	50,002				
	Sub-total					383,348				
	Contingency allowance	%		383,348	0.15	57,502				
	Rounding					-				
	Total South Boundary carpark					440,000				
4	Fence around German Tower - if required					15,000	0	15,000	1,000	16,000
	Chainlink fence assume 50ft x 50ft compound	ft		200	46	9,146				
	Allow for gate	No		1	2,000	2,000				
						11,146				
	A & E allowance	%		11,146	0.15	1,672				
	Sub-total					12,818				
	Contingency allowance	%		12,818	0.15	1,923				
	Rounding					259				

**Total Fencing to German Tower**

**15,000**

5 New VOCED building and maintenance facility	Building area excludes covered ways	ft2	6800		2,360,000	100000	2,460,000	100,000	<b>2,560,000</b>
	Building area excludes covered ways	ft2	6,800	240	1,633,739				
	Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				
	Sub-total				1,783,739				
	A&E allowance	%	1,783,739	0.15	267,561				
					2,051,299				
	Contingency allowance	%	2,051,299	0.15	307,695				
	Rounding				1,006				
	<b>Total VOCED Building</b>				<b>2,360,000</b>				
	Fit-out - assume \$10/ft2	ft2	6,800	10	68,000				
	A&E allowance	%	68,000	0.15	10,200				
					78,200				
	Contingency allowance	%	78,200	0.15	11,730				
	Rounding				10,070				
	<b>Total VOCED Fit-out</b>				<b>100,000</b>				

6 Create hard court area near Student Services building , 2 study huts and landscaping	Assume 1500fts of hard paving				40,000	0	40,000	2,000	<b>42,000</b>
	Shelter structure & roof	No	2	5,000	10,000				
	Allowance for solar panel & wiring	No	2	1,500	3,000				
	Allowance for picnic table	No	2	500	1,000				
	Allowance for landscaping	LS	1	5,000	5,000				
	Hard paving	ft2	1,500	7	10,452				
					29,452				
	A & E allowance	%	29,452	0.15	4,418				
	Sub-total				33,869				
	Contingency allowance	%	33,869	0.15	5,080				
	Rounding				1,050				
	<b>Total Hard Court &amp; Study Huts</b>				<b>40,000</b>				

7 Implement a landscape plan across the campus	Assume \$200K base cost plus fees & contingency				265,000	0	265,000	10,000	<b>275,000</b>
	Allowance for landscaping	LS	1	200,000	200,000				
					200,000				
	A & E allowance	%	200,000	0.15	30,000				
	Sub-total				230,000				
	Contingency allowance	%	230,000	0.15	34,500				
	Rounding				500				
	<b>Total Landscape Plan across campus</b>				<b>265,000</b>				

**TOTAL Yap 5 Year Period to 2018**

**3,205,000 100,000 3,305,000 137,000 3,442,000**

**Yap 10 year vision (2019 to 2023)**

8 Demolish computer lab building	Assume \$30K	No	1	30000	30,000	0	30,000	2,000	<b>32,000</b>
9 New administration and faculty building on computer lab site		ft2	4100		1,610,000	110000	1,720,000	80,000	<b>1,800,000</b>
	Building area excludes covered ways	ft2	4,100	260	1,065,328				
	Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				



					1,215,328
	A&E allowance %	1,215,328	0.15		182,299
					1,397,627
	Contingency allowance %	1,397,627	0.15		209,644
	Rounding				2,729
<b>Total Admin &amp; Faculty Building</b>					<b>1,610,000</b>
Fit-out - assume \$10/ft2	ft2	4,100	10		41,000
Allow extra for admin fit-out	ft2	4,100	10		41,000
	A&E allowance %	82,000	0.15		12,300
					94,300
	Contingency allowance %	94,300	0.15		14,145
	Rounding				1,555
<b>Total Admin &amp; Faculty Fit-out</b>					<b>110,000</b>

10 Demolish administration building	Assume \$30K	No	1	30000	30,000	0	30,000	2,000	<b>32,000</b>
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11 New LRC and computer lab on previous administration site	Building area excludes covered ways	ft2	4600		1,800,000	100,000	1,900,000	100,000	<b>2,000,000</b>
	Building area excludes covered ways	ft2	4,600	260	1,195,246				
	Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				
	Sub-total				1,345,246				
	A&E allowance %	1,345,246	0.15		201,787				
					1,547,033				
	Contingency allowance %	1,547,033	0.15		232,055				
	Rounding				20,912				
<b>Total LRC &amp; Computer Lab Building</b>					<b>1,800,000</b>				
Fit-out - assume \$10/ft2	ft2	4,600	10		46,000				
Allow extra for computer lab fit-out	ft2	4,600	5		23,000				
	A&E allowance %	69,000	0.15		10,350				
					79,350				
	Contingency allowance %	79,350	0.15		11,903				
	Rounding				8,747				
<b>Total LRC &amp; Computer Lab Fit-out</b>					<b>100,000</b>				

12 New CRE extension to CRE building	Building area excludes covered ways	ft2	1500		650,000	20,000	670,000	30,000	<b>700,000</b>
	Building area excludes covered ways	ft2	1,500	260	389,754				
	Allowance for landscaping & paths	LS	1	50,000	50,000				
	Allowance for earthworks, siteworks & drainage	LS	1	50,000	50,000				
	Sub-total				489,754				
	A&E allowance %	489,754	0.15		73,463				
					563,217				
	Contingency allowance %	563,217	0.15		84,483				
	Rounding				2,300				
<b>Total CRE Extension to CRE Building</b>					<b>650,000</b>				
Fit-out - assume \$10/ft2	ft2	1,500	10		15,000				
	A&E allowance %	15,000	0.15		2,250				
					17,250				
	Contingency allowance %	17,250	0.15		2,588				
	Rounding				162				
<b>Total CRE Extension to CRE Fit-out</b>					<b>20,000</b>				

## TOTAL Yap 10 Year Vision (2019 to 2023)

4,120,000	230,000	4,350,000	214,000	4,564,000
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## Yap Long term vision - beyond 2023

13 Relocate basketball hardcourt area	Assumes 1No court x 4,700ft2. Excludes roof covering and lighting	No			85,000	0	85,000	5,000	90,000
	Concrete court	ft2	4,700	8	37,600				
	Allowance for landscaping & nominal seating	LS	1	10,000	10,000				
	Allowance for backboards etc	LS	1	17,111	17,111				
	Sub-total				64,711				
	A&E allowance %		64,711	0.15	9,707				
					74,418				
	Contingency allowance %		74,418	0.15	11,163				
	Rounding				-				580
	<b>Total Relocation of Basketball Court</b>				<b>85,000</b>				
14 Additional new classroom block between student centre and classroom block (Building 6)					1,300,000	40,000	1,340,000	60,000	1,400,000
	Building area excludes covered ways	ft2	3,000	240	720,767				
	Allowance for landscaping & paths	LS	1	100,000	100,000				
	Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				
	Sub-total				970,767				
	A&E allowance %		970,767	0.15	145,615				
					1,116,382				
	Contingency allowance %		1,116,382	0.15	167,457				
	Rounding				16,161				
	<b>Total New Classroom Block</b>				<b>1,300,000</b>				
	Fit-out - assume \$10/ft2	ft2	3,000	10	30,000				
	A&E allowance %		30,000	0.15	4,500				
					34,500				
	Contingency allowance %		34,500	0.15	5,175				
	Rounding				325				
	<b>Total New Classroom Fit-out</b>				<b>40,000</b>				
15 New gymnasium					1,930,000	0	1,930,000	90,000	2,020,000
	Building area - roof only with open sides - assume	ft2	7,050	140	989,491				
	Basketball court plus 50% coverage								
	Concrete basketball court (uncovered)	ft2	4,700	11	52,397				
	Allowance for basketball hoops & courtmarking	LS	1	15,000	15,000				
	Allowance for toilet & changing facilities	LS	1	150,000	150,000				
	Allowance for landscaping & paths	LS	1	100,000	100,000				
	Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				
	Sub-total				1,456,888				
	A&E allowance %		1,456,888	0.15	218,533				
					1,675,422				
	Contingency allowance %		1,675,422	0.15	251,313				
	Rounding				3,265				

<b>Total New Gymnasium</b>					<b>1,930,000</b>				
16 New CRE - Research wing			2300		1,060,000	60000	1,120,000	60,000	<b>1,180,000</b>
	Building area excludes covered ways	ft2	2,300	260	597,623				
	Allowance for landscaping & paths	LS	1	50,000	50,000				
	Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				
	Sub-total				797,623				
	A&E allowance %		797,623	0.15	119,643				
					917,267				
	Contingency allowance %		917,267	0.15	137,590				
	Rounding				5,143				
	<b>Total New CRE Research Wing Building</b>				<b>1,060,000</b>				
	Fit-out - assume \$10/ft2	ft2	2,300	10	23,000				
	Allow additional fit-out for Research area	ft2	2,300	10	23,000				
	A&E allowance %		46,000	0.15	6,900				
					52,900				
	Contingency allowance %		52,900	0.15	7,935				
	Rounding				- 835				
	<b>Total New CRE Research Wing Fit-out</b>				<b>60,000</b>				
<b>TOTAL Yap Long Term Vision (Beyond 2023)</b>					<b>4,375,000</b>	<b>100,000</b>	<b>4,475,000</b>	<b>215,000</b>	<b>4,690,000</b>
<b>Further projects (not in order of priority)</b>									
Relocate power poles servicing other properties	Assume \$50K including fees & contingency	LS	1	50000	50,000	0	50,000	5,000	<b>55,000</b>
Solar power generation	Assume \$500K including associated buildings, fees and contingency	LS	1	500,000	500,000	0	500,000	25,000	525,000
Works to increase drainage capacity - swales and subsoil drainage	Assume \$50K including fees & contingency	LS	1	50000	50,000	0	50,000	5,000	<b>55,000</b>
<b>TOTAL Future Projects (Yap)</b>					<b>600,000</b>	<b>0</b>	<b>600,000</b>	<b>35,000</b>	<b>635,000</b>
<b>GRAND TOTAL YAP CAMPUS</b>									
TOTAL Yap 5 Year Period to 2018					3,205,000	100,000	3,305,000	137,000	3,442,000
TOTAL Yap 10 Year Vision (2019 to 2023)					4,120,000	230,000	4,350,000	214,000	4,564,000
TOTAL Yap Long Term Vision (Beyond 2023)					4,375,000	100,000	4,475,000	215,000	4,690,000
TOTAL Future Projects (Yap)					600,000	0	600,000	35,000	635,000
<b>GRAND TOTAL YAP CAMPUS</b>					<b>12,300,000</b>	<b>430,000</b>	<b>12,730,000</b>	<b>601,000</b>	<b>13,331,000</b>

**COM-FSM Space Utilization and Facilities Study  
Rough Order of Cost Estimate Summary - FSM - FMI  
Campus (November 2013)**

**Limitations, Assumptions, Inclusions & Exclusions**

**Unit**

**Quantity**

**Rate \$USD**

**Buildings,  
Services &  
Siteworks \$USD  
(2013 cost)**

**Allowance for Fit-  
out \$USD (2013  
cost)**

**TOTAL \$USD  
(2013 cost)**

**Allowance for  
Escalation (3.4%  
pa)**

**TOTAL Escalated  
Cost \$USD**

**All Projects**

- a These are 'rough order of cost' estimates based on highly conceptual information and have an accuracy range that is no better than +/-20%. All estimates need to be confirmed prior to funding application & construction
- b Fit-out costs (desks, chairs & loose furniture only) assumed at \$10/ft2
- c No allowance for data projectors, screens, computers, printers, photo-copiers etc
- d Architectural & Engineering fees and contingency allowances have been included
- e Escalation has been assumed at the rate of 3.4% per annum. November 2013 has been used as the base date for escalation.
- f Property purchase or leasing costs are excluded
- g Taxes, duties and fees are excluded on all projects

**FSM - FMI 5 year period to 2018**

**1 Address provision of fire fighting facilities**

Fire fighting hydrants through site	Assumes use of existing storage tanks				165,000	0	165,000	5,000	170,000
	Fire main - length assumed	ft	1,500	40	60,000	-			
	Fire hydrant - assume at 300ft intervals	No	6	2,000	12,000	-			
	Allowance for pumps, electrical & pipework	LS	1	50,000	50,000				
	Sub-Total				122,000				
	A & E allowance	%	122,000	0.15	18,300				
	Sub-total				140,300				
	Contingency allowance	%	140,300	0.15	21,045				
	Rounding				3,655				
	<b>Total Fire Mains &amp; Hydrants</b>				<b>165,000</b>				

**2 New duplex residence for instructors in the residential zone**

Building area excludes covered ways	ft2	2,800		800,000	40,000	840,000	35,000	875,000
Building area excludes covered ways	ft2	2,800	208	583,478				
Allowance for earthworks, siteworks & drainage	LS	1	20,000	20,000				
	Sub-total			603,478				
	A&E allowance	%	603,478	0.15	90,522			
				694,000				
	Contingency allowance	%	694,000	0.15	104,100			
	Rounding			1,900				
	<b>Total Duplex Residence Building</b>			<b>800,000</b>				
Fit-out - assume \$10/ft2	ft2	2,800	10	28,000				
	A&E allowance	%	28,000	0.15	4,200			
				32,200				
	Contingency allowance	%	32,200	0.15	4,830			
	Rounding			2,970				
	<b>Total Duplex Residence Fit-out</b>			<b>40,000</b>				

**3 Relocate women's quarters into the north eastern end of Administration Building A and add conference room and administration office to area vacated by the residence.**

Assume 2No toilets & 2No. Showers fitted into existing room with existing plumbing				40,000	0	40,000	2,000	42,000
Toilets, showers & whb	No	2	10,000	20,000				
Allowance for partitions and fit-out	LS	1	10,000	10,000				
	Sub-total			30,000				
	A&E allowance	%	30,000	0.15	4,500			
				34,500				

		Contingency allowance % Rounding	34,500	0.15	5,175 325			
	<b>Total Relocate Women's Quarters</b>				<b>40,000</b>			
4	Remove wall between men's and previous women's quarters. Move men's quarters to the north and utilise the southern quarters as library study space	Assume \$5K including fees & Contingency			5,000	0	5,000	5,000
5	Increase computer room to incorporate former library space in Building C	Assume \$3K including fees & Contingency to form opening in existing wall (no door required)			3,000	0	3,000	3,000
6	Separate server room from IT office (within existing building envelope)	New partition, door & A/C unit assumed	1		20,000	0	20,000	21,000
		New partition & door No	1	10,000	10,000			
		Allowance for fan coil unit & server room electrical No	1	5,000	5,000			
					15,000			
		A & E allowance %	15,000	0.15	2,250			
		Sub-total			17,250			
		Contingency allowance %	17,250	0.15	2,588			
		Rounding			162			
		<b>Total IT Server Room</b>			<b>20,000</b>			
7	Provide covered access over classroom doors to Building C, new cadet toilet block next to Seaman's shelter and rationalise location of the access path	10 x 6ft canopy attached to existing building (2No.)			60,000	0	60,000	62,000
		10 x 6ft canopy attached to existing building (2No.) No	2	3,500	7,000			
		Allowance for partitions, doors & refurbishment of existing space LS	1	18,000	18,000			
		New Cadet block toilet (2 WC's , 1 shower & 2 WHB) LS	1	15,000	15,000			
		Allowance for new drainage line LS	1	5,000	5,000			
					45,000			
		A & E allowance %	45,000	0.15	6,750			
		Sub-total			51,750			
		Contingency allowance %	51,750	0.15	7,763			
		Rounding			487			
		<b>TotalCovered Access &amp; Cadet Toilet</b>			<b>60,000</b>			
8	Upgrade below ground services - drainage and water supply	Assume \$200K including fees and contingency			200,000	0	200,000	210,000
9	Storage for maintenance materials (potentially a container type facility)	Assume \$10K for container & base slab			10,000	0	10,000	10,000
10	Address the current sewage system and leaching field	Assume \$100K for modification & extension of existing system			135,000	0	135,000	140,000

Allowance for leaching field LS	1	100,000	100,000
			100,000
A & E allowance %	100,000	0.15	15,000
Sub-total			115,000
Contingency allowance %	115,000	0.15	17,250
Rounding			2,750
<b>Total Sewage System</b>			<b>135,000</b>

**TOTAL FSM-FMI 5 Year Period to 2018**

<b>1,438,000</b>	<b>40,000</b>	<b>1,478,000</b>	<b>60,000</b>	<b>1,538,000</b>
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**FSM - FMI 10 year vision (2019 to 2023)**

- 11 New classroom/ study space with covered access connecting to residential quarters

Building area excludes covered ways	ft2	1,200		450,000	15,000	465,000	20,000	<b>485,000</b>
Building area excludes covered ways	ft2	1,200	240	288,307				
Allowance for earthworks, siteworks & drainage	LS	1	50,000	50,000				
Sub-total				338,307				
A&E allowance %		338,307	0.15	50,746				
				389,053				
Contingency allowance %		389,053	0.15	58,358				
Rounding				2,589				
<b>Total New Classroom/Study Space Building</b>				<b>450,000</b>				
Fit-out - assume \$10/ft2	ft2	1,200	10	12,000				
A&E allowance %		12,000	0.15	1,800				
				13,800				
Contingency allowance %		13,800	0.15	2,070				
Rounding				-				
<b>Total New Classroom/Study Space Fit-out</b>				<b>15,000</b>				

- 12 Improve shop areas by constructing a stand alone engineering shop area

Assume portal frame with mesh sides industrial building	ft2	1,400		245,000	20,000	265,000	15,000	<b>280,000</b>
Building area excludes covered ways	ft2	1,400	110	154,676				
Allowance for earthworks, siteworks & drainage	LS	1	30,000	30,000				
Sub-total				184,676				
A&E allowance %		184,676	0.15	27,701				
				212,377				
Contingency allowance %		212,377	0.15	31,857				
Rounding				766				
<b>Total Maintenance Building</b>				<b>245,000</b>				
Fit-out - assume \$10/ft2	ft2	1,400	10	14,000				
A&E allowance %		14,000	0.15	2,100				
				16,100				
Contingency allowance %		16,100	0.15	2,415				
Rounding				1,485				
<b>Total Maintenance Fit-out</b>				<b>20,000</b>				

- 13 New security post

Assume \$30K including fees & contingency. Excludes security alarm & video monitoring system	No	1	30,000	30,000	0	30,000	2,000	<b>32,000</b>
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**TOTAL FSM - FMI 10 Year Vision (2019 to 2023)**

<b>725,000</b>	<b>35,000</b>	<b>760,000</b>	<b>37,000</b>	<b>797,000</b>
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FSM - FMI Long term vision - beyond 2023										
14	Covered recreation area (over basketball court) for drills	Assume 5,000ft2 cover with open sides	ft2	5,000		740,000	0	740,000	35,000	775,000
		Allowance for covered open space	ft2	5,000	111	557,414				
		Sub-total				557,414				
		A&E allowance %		557,414	0.15	83,612				
						641,026				
		Contingency allowance %		641,026	0.15	96,154				
		Rounding				2,821				
		Total Covered Recreation Area				740,000				
TOTAL FSM-FMI Long Term Vision (Beyond 2023)						740,000	0	740,000	35,000	775,000
Further projects (not in order of priority)										
	Provide facility for on-site water supply	Assume \$350K including fees & contingency	LS	1	350,000	350,000	0	350,000	15,000	365,000
	Solar power generation	Assume \$500K including associated buildings, fees and contingency	LS	1	500,000	500,000	0	500,000	25,000	525,000
	Work with State Government to investigate rerouting the main road to the south of the classroom Building C	Assume \$200K including fees & contingency	LS	1	200,000	200,000	0	200,000	10,000	210,000
	Works to increase drainage capacity - swales and subsoil drainage	Assume \$100K including fees & contingency	LS	1	100,000	100,000	0	100,000	5,000	105,000
TOTAL Future Projects (FSM-FMI)						1,150,000	0	1,150,000	55,000	1,205,000
GRAND TOTAL FSM - FMI CAMPUS										
TOTAL FSM - FMI 5 Year Period to 2018						1,438,000	40,000	1,478,000	60,000	1,538,000
TOTAL FSM - FMI 10 Year Vision (2019 to 2023)						725,000	35,000	760,000	37,000	797,000
TOTAL FSM - FMI Long Term Vision (Beyond 2023)						740,000	0	740,000	35,000	775,000
TOTAL Future Projects (FSM - FMI)						1,150,000	0	1,150,000	55,000	1,205,000
GRAND TOTAL FSM - FMI CAMPUS						4,053,000	75,000	4,128,000	187,000	4,315,000

**COM-FSM Space Utilization and Facilities Study  
Rough Order of Cost Estimate Summary - Chuuk  
Campus (November 2013)**

**Limitations, Assumptions, Inclusions & Exclusions**

**Unit**

**Quantity**

**Rate \$USD**

**Buildings,  
Services &  
Siteworks \$USD  
(2013 cost)**

**Allowance for Fit-  
out \$USD (2013  
cost)**

**TOTAL \$USD  
(2013 cost)**

**Allowance for  
Escalation (3.4%  
pa)**

**TOTAL Escalated  
Cost \$USD**

**All Projects**

- a These are 'rough order of cost' estimates based on highly conceptual information and have an accuracy range that is no better than +/-20%. All estimates need to be confirmed prior to funding application & construction
- b Fit-out costs (desks, chairs & loose furniture only) assumed at \$10/ft2
- c No allowance for data projectors, screens, computers, printers, photo-copiers etc
- d Architectural & Engineering fees and contingency allowances have been included
- e Escalation has been assumed at the rate of 3.4% per annum. November 2013 has been used as the base date for escalation.
- f Property purchase or leasing costs are excluded
- g Relocation costs of staff, fittings and equipment to the proposed Nabtuku site are excluded
- h Any demolition or holding costs of the Nepukos Weno site (after relocation to proposed Nantuku site) are excluded
- i Taxes, duties and fees are excluded on all projects

**Chuuk 5 year period to 2018 - assumes interim  
upgrades prior to move to a permanent site**

1	Extend campus to the north, fence perimeter and create a coral base carpark area with an entry and exit onto the main road	Assumes 500ft of perimeter fence	Parks	26		210,000	0	210,000	10,000	220,000
		<i>Carparks</i>	<i>No</i>	26	3,500	91,000				
		<i>Entry &amp; Exit crossings</i>	<i>No</i>	2	2,500	5,000				
		<i>Footpaths assume 5ft wide</i>	<i>ft</i>	300	20	6,000				
		<i>Allowance for drainage to car park</i>	<i>LS</i>	1	10,000	10,000				
		<i>Allowance for additional earthworks</i>	<i>LS</i>	1	10,000	10,000				
		<i>Allowance for perimeter fencing</i>	<i>ft</i>	500	50	25,000				
		<i>Allowance for carpark lighting</i>	<i>No</i>	2	5,000	10,000				
						157,000				
		<i>A &amp; E allowance</i>	<i>%</i>	157,000	0.15	23,550				
		<i>Sub-total</i>				180,550				
		<i>Contingency allowance</i>	<i>%</i>	180,550	0.15	27,083				
		<i>Rounding</i>				2,367				
		<b>Total Extension to North</b>				<b>210,000</b>				
2	Restrict cars to campus, designate carpark area for visitors, create a central grassed area, 2 study huts on the coastal edge					100,000	0	100,000	5,000	105,000
		<i>Allow to form landscaped grass area</i>	<i>LS</i>	1	50,000	50,000				
		<i>Study hut (traditional thatched roof), solar panel &amp; picnic table</i>	<i>No</i>	2	7,000	14,000				
		<i>Allowance for paths</i>	<i>LS</i>	1	5,000	5,000				
						69,000				
		<i>A &amp; E allowance</i>	<i>%</i>	69,000	0.15	10,350				
		<i>Sub-total</i>				79,350				
		<i>Contingency allowance</i>	<i>%</i>	79,350	0.15	11,903				
		<i>Rounding</i>				8,747				
		<b>Total Extension to North</b>				<b>100,000</b>				
3	Retrofit a classroom with a science bench and plumbing					80,000	0	80,000	3,000	83,000
		<i>Relocate existing benches and fume cupboard to Block J including new plumbing, electrical &amp; bottled gas</i>	<i>LS</i>	1	50,000	50,000				



	Allowance for refurbishment of new science classroom	LS	1	10,000	10,000				
		Sub-total			60,000				
		A&E allowance %	60,000	0.15	9,000				
					69,000				
		Contingency allowance %	69,000	0.15	10,350				
		Rounding			650				
	<b>Total Science Room Relocation</b>				<b>80,000</b>				
4	Reroof student covered area and add roof ventilation	Included separately in asset renewal budgets			0	0	0	0	0
5	Upgrade wi fi	Excluded - assume part of separate Technology budget			0	0	0	0	0
6	Extend CRE - extension building to main road	Building area excluding covered ways	ft2	1250	500,000	20,000	520,000	20,000	540,000
		Building area excluding covered ways	ft2	1,250	260	324,795			
		Allowance for earthworks, siteworks & drainage	LS	1	50,000	50,000			
		Sub-total			374,795				
		A&E allowance %	374,795	0.15	56,219				
					431,014				
		Contingency allowance %	431,014	0.15	64,652				
		Rounding			4,333				
	<b>Total Extension to CRE Building</b>				<b>500,000</b>				
		Fit-out - assume \$10/ft2	ft2	1,250	10	12,500			
		A&E allowance %	12,500	0.15	1,875				
					14,375				
		Contingency allowance %	14,375	0.15	2,156				
		Rounding			3,469				
	<b>Total Extension to CRE Fit-out</b>				<b>20,000</b>				
7	Landscaping (continuous line of hedges) along the road frontage and upgrade signage	Assume \$20K including fees & contingency			20,000	0	20,000	1,000	21,000
8	Meeting room for student body meetings - review classroom use and retrofit within existing building footprint	Assume \$5K refurbishment including fees & contingency			5,000	0	5,000	-	5,000
9	Staff lounge - meeting place for all faculty - review classroom/ faculty space and consider conversion of one faculty office	Assume \$5K refurbishment including fees & contingency			5,000	0	5,000	-	5,000
10	Conference space set up with conferencing remote learning - review classroom utilization and convert classroom space to new function	Excluded - assume part of separate Technology budget			0	0	0	0	0
<b>5 year vision on the Nantaku site - to 2018</b>									
11	Road connection to site	Approx. half a mile long. Excludes property purchase & legal costs	No	1	2,300,000	0	2,300,000	100,000	2,400,000
		Allowance for roading - assume 20ft wide	ft	3,000	320	960,366	-		

Allowance for drainage	LS	1	250,000	250,000
Allowance for earthworks & retaining	LS	1	500,000	500,000
Sub-total				1,710,366
A&E allowance %		1,710,366	0.15	256,555
				1,966,921
Contingency allowance %		1,966,921	0.15	295,038
Rounding				38,041
<b>Total Road Connection to Site</b>				<b>2,300,000</b>

12 Site infrastructure services - water supply, site drainage, sewage disposal, electricity				3,250,000	0	3,250,000	130,000	<b>3,380,000</b>
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Allowance for water bore, pumps, treatment & storage	LS	1	500,000	500,000	-
Allowance for site drainage system & detention pond	LS	1	200,000	200,000	
Allowance for packaged wastewater system (containerised) & connection to either local network or septic leaching field	LS	1	500,000	500,000	
Allowance for site fire ring main & storage tanks	LS	1	200,000	200,000	
Allowance for connection to main power supply	LS	1	200,000	200,000	
Allowance for on-site emergency generator & shed	No	1	350,000	350,000	
Allowance for earthworks & retaining across site	LS	1	500,000	500,000	
Sub-total				2,450,000	
A&E allowance %		2,450,000	0.15	367,500	
				2,817,500	
Contingency allowance %		2,817,500	0.15	422,625	
Rounding				9,875	
<b>Total Extension to CRE Building</b>				<b>3,250,000</b>	

13 On site roading infrastructure and form basketball hardcourt area	Basketball court is uncovered. Extent of earthworks & retaining walls is assumed			1,250,000	0	1,250,000	50,000	<b>1,300,000</b>
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Carparks	No	50	3,500	175,000	
Access / Drive way	ft2	19,000	10	190,001	
Entry & Exit crossings	No	1	5,000	5,000	
Footpaths assume 10ft wide	ft	820	45	36,900	
Allowance for drainage to car park	LS	1	30,000	30,000	
Allowance for additional earthworks	LS	1	50,000	50,000	
Allowance for retaining walls	ft	700	305	213,415	
Fence/handrail to top of retaining walls	ft	700	168	117,378	
Concrete basketball court (uncovered)	ft2	4,700	11	52,397	
Allowance for basketball hoops & courtmarking	LS	1	15,000	15,000	
Allowance for carpark & access way lighting	No	12	5,000	60,000	
				945,090	
A & E allowance %		945,090	0.15	141,764	
Sub-total				1,086,854	
Contingency allowance %		1,086,854	0.15	163,028	
Rounding				118	
<b>Total Extension to North</b>				<b>1,250,000</b>	

14 Buildings 1,2 and 3 - two level administration and classroom buildings and associated landscaping	Building area excluding covered ways	ft2	28000	10,025,000	550,000	10,575,000	425,000	<b>11,000,000</b>
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Building 1 - Administration	ft2	8,000	260	2,078,689
Building 2 - Student services & teaching spaces	ft2	10,000	240	2,402,557
Building 3 - teaching spaces, LRC & Computer Lab	ft2	10,000	260	2,598,361
Allowance for earthworks, siteworks & drainage	LS	1	250,000	250,000
Allowance for landscaping & paths	LS	1	250,000	250,000
Sub-total				7,579,607
A&E allowance	%	7,579,607	0.15	1,136,941
				8,716,548
Contingency allowance	%	8,716,548	0.15	1,307,482
Rounding				970
<b>Total Buildings 1,2 &amp; 3</b>				<b>10,025,000</b>
Fit-out - assume \$10/ft2	ft2	28,000	10	280,000
Allow extra for admin fit-out	ft2	8,000	10	80,000
Allow extra for computer lab fit-out	ft2	10,000	5	50,000
A&E allowance	%	410,000	0.15	61,500
				471,500
Contingency allowance	%	471,500	0.15	70,725
Rounding				7,775
<b>Total Admin &amp; Faculty Fit-out</b>				<b>550,000</b>

15 Building 5 -CRE - research building	Building area excludes covered ways	ft2	2200		1,100,000	60,000	1,160,000	45,000	1,205,000
	Building area excludes covered ways	ft2	2,200	260	571,639				
	Allowance for landscaping and paths	LS	1	100,000	100,000				
	Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				

Sub-total				821,639
A&E allowance	%	821,639	0.15	123,246
				944,885
Contingency allowance	%	944,885	0.15	141,733
Rounding				13,382
<b>Total New CRE Research Wing Building</b>				<b>1,100,000</b>
Fit-out - assume \$10/ft2	ft2	2,200	10	22,000
Allow additional fit-out for Research area	ft2	2,200	10	22,000
A&E allowance	%	44,000	0.15	6,600
				50,600
Contingency allowance	%	50,600	0.15	7,590
Rounding				1,810
<b>Total New CRE Research Wing Fit-out</b>				<b>60,000</b>

16 Building 5 - Maintenance building (at top of the site)	Building area excludes covered ways	ft2	1000		190,000	15,000	205,000	10,000	215,000
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Building area excludes covered ways	ft2	1,000	110	110,483
Allowance for earthworks, siteworks & drainage	LS	1	30,000	30,000
Sub-total				140,483
A&E allowance	%	140,483	0.15	21,072
				161,555
Contingency allowance	%	161,555	0.15	24,233
Rounding				4,212
<b>Total Maintenance Building</b>				<b>190,000</b>
Fit-out - assume \$10/ft2	ft2	1,000	10	10,000
A&E allowance	%	10,000	0.15	1,500

					11,500					
		Contingency allowance %		11,500	0.15	1,725				
		Rounding				1,775				
	<b>Total Maintenance Fit-out</b>					<b>15,000</b>				
<b>TOTAL Chuuk 5 year vision to 2018</b>						<b>19,035,000</b>	<b>645,000</b>	<b>19,680,000</b>	<b>799,000</b>	<b>20,479,000</b>
<b>Chuuk 10 year vision to 2023</b>										
17 Building 6 - two level classroom building dependent on roll number increase						4,100,000	135,000	4,235,000	195,000	4,430,000
	Building 6 - (Type dependent on roll numbers)	ft2	10,000	260	2,598,361					
	Allowance for earthworks, siteworks & drainage	LS	1	250,000	250,000					
	Allowance for landscaping & paths	LS	1	250,000	250,000					
	Sub-total				3,098,361					
	A&E allowance %		3,098,361	0.15	464,754					
					3,563,115					
	Contingency allowance %		3,563,115	0.15	534,467					
	Rounding				2,417					
	<b>Total Buildings 1,2 &amp; 3</b>				<b>4,100,000</b>					
	Fit-out - assume \$10/ft2	ft2	10,000	10	100,000					
	A&E allowance %		100,000	0.15	15,000					
					115,000					
	Contingency allowance %		115,000	0.15	17,250					
	Rounding				2,750					
	<b>Total Admin &amp; Faculty Fit-out</b>				<b>135,000</b>					
18 Associated landscaping	Assume \$100Kbase plus fees & contingency for campus wide landscaping					135,000	0	135,000	10,000	145,000
	Allowance for landscaping & paths	LS	1	100,000	100,000					
	Sub-total				100,000					
	A&E allowance %		100,000	0.15	15,000					
					115,000					
	Contingency allowance %		115,000	0.15	17,250					
	Rounding				2,750					
	<b>Total Associated Landscaping</b>				<b>135,000</b>					
<b>TOTAL Chuuk 10 year vision (2019 to 2023)</b>						<b>4,235,000</b>	<b>135,000</b>	<b>4,370,000</b>	<b>205,000</b>	<b>4,575,000</b>
<b>Chuuk Long term vision - beyond 2023</b>										
No Projects identified										
<b>TOTAL Chuuk Long Term Vision (Beyond 2023)</b>						<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Chuuk Further projects (not in order of priority)</b>										
19 Solar power generation	Assume \$500K including associated buildings, fees and contingency	LS	1	500000	500,000	0	500,000	25,000		525,000
<b>TOTAL Chuuk Future Projects</b>						<b>500,000</b>	<b>0</b>	<b>500,000</b>	<b>25,000</b>	<b>525,000</b>

**GRAND TOTAL CHUUK CAMPUS**

TOTAL Chuuk 5 Year Period to 2018	19,035,000	645,000	19,680,000	799,000	20,479,000
TOTAL Chuuk 10 Year Vision (2019 to 2023)	4,235,000	135,000	4,370,000	205,000	4,575,000
TOTAL Chuuk Long Term Vision (Beyond 2023)	0	0	0	0	0
TOTAL Future Projects (Chuuk)	500,000	-	500,000	25,000	525,000
<b>GRAND TOTAL CHUUK CAMPUS</b>	<b>23,770,000</b>	<b>780,000</b>	<b>24,550,000</b>	<b>1,029,000</b>	<b>25,579,000</b>

**COM-FSM Space Utilization and Facilities Study  
Rough Order of Cost Estimate Summary - National  
Campus (November 2013)**

**Limitations, Assumptions, Inclusions & Exclusions**

**Unit**

**Quantity**

**Rate \$USD**

**Buildings,  
Services &  
Siteworks \$USD  
(2013 cost)**

**Allowance for Fit-  
out \$USD (2013  
cost)**

**TOTAL \$USD  
(2013 cost)**

**Allowance for  
Escalation (3.4%  
pa)**

**TOTAL Escalated  
Cost \$USD**

**All Projects**

- a These are 'rough order of cost' estimates based on highly conceptual information and have an accuracy range that is no better than +/-20%. All estimates need to be confirmed prior to funding application & construction
- b Fit-out costs (desks, chairs & loose furniture only) assumed at \$10/ft2
- c No allowance for data projectors, screens, computers, printers, photo-copiers etc
- d Architectural & Engineering fees and contingency allowances have been included
- e Escalation has been assumed at the rate of 3.4% per annum. November 2013 has been used as the base date for escalation.
- f Property purchase or leasing costs are excluded
- g Taxes, duties and fees are excluded on all projects

**National 5 year period to 2018**

1	Secure IT facilities with server room and backup area	Assume 250ft2 space inside existing building		250		40,000	0	40,000	2,000	42,000
		<i>Retro-fit existing floor space</i>	ft	250	112	27,881				
		<i>Allowance for fan coil unit</i>	No	1	3,000	3,000				
						30,881				
		<i>A &amp; E allowance</i>	%	30,881	0.15	4,632				
		<i>Sub-total</i>				35,513				
		<i>Contingency allowance</i>	%	35,513	0.15	5,327				
		<i>Rounding</i>				- 840				
		<b>Total IT Server Room</b>				<b>40,000</b>				
2	Public community health interface building	Building area excludes covered ways	ft2	3,800		1,460,000	50000	1,510,000	60,000	1,570,000
		<i>Building area excludes covered ways</i>	ft2	3,800	260	987,377				
		<i>10ft wide path (uncovered)</i>	ft	350	69	24,009				
		<i>Allowance for landscaping</i>	LS	1		30,000				
		<i>Allowance for earthworks, siteworks &amp; drainage</i>	LS	1	60,000	60,000				
						1,101,386				
		<i>Sub-total</i>				1,101,386				
		<i>A&amp;E allowance</i>	%	1,101,386	0.15	165,208				
						1,266,594				
		<i>Contingency allowance</i>	%	1,266,594	0.15	189,989				
		<i>Rounding</i>				3,416				
		<b>Total Public Health Building</b>				<b>1,460,000</b>				
		<i>Fit-out - assume \$10/ft2</i>	ft2	3,800	10	38,000				
		<i>A&amp;E allowance</i>	%	38,000	0.15	5,700				
						43,700				
		<i>Contingency allowance</i>	%	43,700	0.15	6,555				
		<i>Rounding</i>				- 255				
		<b>Total Public Health Fit-out</b>				<b>50,000</b>				
3	Toilets at MITC building - replace darkroom area with wc facilities accessible for weekend use	Allow \$25K base cost				35,000	0	35,000	1,000	36,000
		<i>Allow \$25K base cost</i>	LS	1	25,000	25,000				
		<i>Sub-total</i>				25,000				
		<i>A&amp;E allowance</i>	%	25,000	0.15	3,750				
						28,750				
		<i>Contingency allowance</i>	%	28,750	0.15	4,313				
		<i>Rounding</i>				1,937				

	Total MITC Building Toilets				35,000				
4 Rationalize the science storage space to include project space through replanning layout of the existing space	Assume \$30K base cost for 3 bays of Lundia shelving				50,000	0	50,000	2,000	52,000
	Allow \$30K base cost	LS	1	30,000	30,000				
	Allow sundry re-furbishment costs	LS	1	5,000	5,000				
	Sub-total				35,000				
	A&E allowance %				35,000	0.15	5,250		
					40,250				
	Contingency allowance %				40,250	0.15	6,038		
	Rounding						3,712		
	Total Science Storage						50,000		
5 Rationalize the administration area through the review of area used for storage of files and alternative means of storage - moveable shelving, digitized files	Assume \$30K base cost for 3 bays of Lundia shelving				50,000	0	50,000	2,000	52,000
	Allow \$30K base cost	LS	1	30,000	30,000				
	Allow sundry re-furbishment costs	LS	1	5,000	5,000				
	Sub-total				35,000				
	A&E allowance %				35,000	0.15	5,250		
					40,250				
	Contingency allowance %				40,250	0.15	6,038		
	Rounding						3,712		
	Total Administration Storage						50,000		
6 Upgrade the gymnasium building to provide facilities required for next 10 years - i.e. space cooling, water storage, solar panels	Scope requirements unclear - assume \$300K base plus fees & contingency				400,000	0	400,000	20,000	420,000
	Allow \$300K base cost	LS	1	300,000	300,000				
	Sub-total				300,000				
	A&E allowance %				300,000	0.15	45,000		
					345,000				
	Contingency allowance %				345,000	0.15	51,750		
	Rounding						3,250		
	Total Gymnasium Upgrade						400,000		
	7 Increase disabled access across the site - access to both administration levels	Assume lift replacement of \$100K				170,000	0	170,000	10,000
Replace existing service /dumbwaiter lift		No	1	100,000	100,000				
10ft wide concrete path		ft	400	69	27,439				
Sub-total				127,439					
A&E allowance %				127,439	0.15	19,116			
				146,555					
Contingency allowance %				146,555	0.15	21,983			
Rounding						1,462			
Total Disabled Access						170,000			
8 Consolidate bookstore and bookstore warehouse area					20,000	0	20,000	1,000	21,000
	Allow to remove esiting shelving - assume \$10K	LS	1	10,000	10,000				

Remove existing wall	No	1	5,000	5,000
Sub-total				15,000
A&E allowance %		15,000	0.15	2,250
				17,250
Contingency allowance %		17,250	0.15	2,588
Rounding				162
<b>Total Bookstore Consolidation</b>				<b>20,000</b>

9 Relocate security within the campus (previous bookstore area)

				5,000	0	5,000	-	5,000
Allow \$3K base cost to refurbish bookstore (where shelving removed)	LS	1	3,000	3,000				
Sub-total				3,000				
A&E allowance %		3,000	0.15	450				
				3,450				
Contingency allowance %		3,450	0.15	518				
Rounding				1,032				
<b>Total Security Relocation</b>				<b>5,000</b>				

10 Provide a covered pick up/ drop off space for taxis/ buses at main entry

Assume Bus bay & small bus shelter				20,000	0	20,000	1,000	21,000
Allow to form bus bay - concrete slab & kerbing	No	1	7,500	7,500				
Bus shelter	No	1	7,500	7,500				
Sub-total				15,000				
A&E allowance %		15,000	0.15	2,250				
				17,250				
Contingency allowance %		17,250	0.15	2,588				
Rounding				162				
<b>Total Pick-up/Drop-off Space</b>				<b>20,000</b>				

11 New two level student services building

Building area excludes covered ways	ft2	8,100		2,800,000	110,000	2,909,999	115,001	3,025,000
Building area excludes covered ways	ft2	8,100	240	1,946,071				
Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				
Sub-total				2,096,071				
A&E allowance %		2,096,071	0.15	314,411				
				2,410,482				
Contingency allowance %		2,410,482	0.15	361,572				
Rounding				27,946				
<b>Total Student Services Building</b>				<b>2,800,000</b>				
Fit-out - assume \$10/ft2	ft2	8,100	10	81,000				
A&E allowance %		81,000	0.15	12,150				
				93,150				
Contingency allowance %		93,150	0.15	13,973				
Rounding				2,877				
<b>Total Student Services Fit-out</b>				<b>110,000</b>				

12 Landscape work, paths in connection with the new student services building

Allow \$200K base cost for covered ways & landscaping				265,000	0	265,000	10,000	275,000
Allowance for covered ways & landscaping	LS	1	200,000	200,000				



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TOTAL National 5 Year Period to 2018					5,665,000	160,000	5,825,000	238,000	6,063,000
National 10 year vision (2019 to 2023)									
16	Quiet contemplation place for residential students - pastoral care	Assume 220ft2 structure with 3No. Side walls			50,000	0	50,000	2,000	52,000
		Thatched roof open sided shelter	ft2	220	120		26,400		
		Allowance for earthworks & retaining	LS	1	5,000		5,000		
		Allowance for landscaping & nominal seating	LS	1	5,000		5,000		
		Sub-total					36,400		
		A&E allowance	%	36,400	0.15		5,460		
							41,860		
		Contingency allowance	%	41,860	0.15		6,279		
		Rounding					1,861		
		Total Covered Area for Students					50,000		
17	Marine science/ applied research building adjacent to the agriculture building	Building area excludes covered ways	ft2	5,700		2,025,000	75,000	2,100,000	100,000
		Building area excludes covered ways	ft2	5,700	260	1,481,066			
		Allowance for earthworks, siteworks & drainage	LS	1	50,000	50,000			
		Sub-total				1,531,066			
		A&E allowance	%	1,531,066	0.15	229,660			
						1,760,726			
		Contingency allowance	%	1,760,726	0.15	264,109			
		Rounding				165			
		Total Marine Science Building				2,025,000			
		Fit-out - assume \$10/ft2	ft2	5,700	10	57,000			
		A&E allowance	%	57,000	0.15	8,550			
						65,550			
		Contingency allowance	%	65,550	0.15	9,833			
		Rounding				- 383			
		Total Marine Science Fit-out				75,000			
TOTAL National 10 Year Vision (2019 to 2023)					2,075,000	75,000	2,150,000	102,000	2,252,000
National Long term vision - beyond 2023									
18	Track and field / baseball facility including associated vehicle access and parking as well as pedestrian access	All costs assumed. Excludes seating and lighting for night games	ft2	1		1,000,000	0	1,000,000	50,000
		Allowance for running track & football field	LS	1	300,000	300,000			
		Allowance for Baseball diamond & fencing	LS	1	150,000	150,000			
		Allowance for toilet/changing/storage facilities	LS	1	100,000	100,000			
		Allowance for earthworks, siteworks, drainage, vehicle access & paths	LS	1	200,000	200,000			
		Sub-total				750,000			
		A&E allowance	%	750,000	0.15	112,500			
						862,500			
		Contingency allowance	%	862,500	0.15	129,375			
		Rounding				8,125			
		Total Track & Field and Baseball				1,000,000			

TOTAL National Long Term Vision (Beyond 2023)					1,000,000	0	1,000,000	50,000	1,050,000
Further projects (not in order of priority)									
Solar power generation	Assume \$500K including associated buildings, fees and contingency	LS	1	500,000	500,000	0	500,000	25,000	525,000
TOTAL Future Projects (National)					500,000	0	500,000	25,000	525,000
GRAND TOTAL NATIONAL CAMPUS									
TOTAL National 5 Year Period to 2018					5,665,000	160,000	5,825,000	238,000	6,063,000
TOTAL National 10 Year Vision (2019 to 2023)					2,075,000	75,000	2,150,000	102,000	2,252,000
TOTAL National Long Term Vision (Beyond 2023)					1,000,000	0	1,000,000	50,000	1,050,000
TOTAL Future Projects (National)					500,000	0	500,000	25,000	525,000
GRAND TOTAL NATIONAL CAMPUS					9,240,000	235,000	9,475,000	415,000	9,890,000

COM-FSM Space Utilization and Facilities Study Rough Order of Cost Estimate Summary - Pohnpei Campus (November 2013)		Limitations, Assumptions, Inclusions & Exclusions	Unit	Quantity	Rate \$USD	Buildings, Services & Siteworks \$USD (2013 cost)	Allowance for Fit- out \$USD (2013 cost)	TOTAL \$USD (2013 cost)	Allowance for Escalation (3.4% pa)	TOTAL Escalated Cost \$USD
<b>All Projects</b>										
a	These are 'rough order of cost' estimates based on highly conceptual information and have an accuracy range that is no better than +/-20%. All estimates need to be confirmed prior to funding application & construction									
b	Fit-out costs (desks, chairs & loose furniture only) assumed at \$10/ft2									
c	No allowance for data projectors, screens, computers, printers, photo-copiers etc									
d	Architectural & Engineering fees and contingency allowances have been included									
e	Escalation has been assumed at the rate of 3.4% per annum. November 2013 has been used as the base date for escalation.									
f	Property purchase or leasing costs are excluded									
g	Taxes, duties and fees are excluded on all projects									
<b>Pohnpei 5 year period to 2018</b>										
1	Create a vehicle route through the campus for service access and service with fire hydrants, consider demolition of end of classroom building to route access around existing mahogany trees. Seating areas for small group or individual study.	Assume 10ft wide concrete service access road x 3,300ft long. Excludes Fire mains & Hydrants (priced separately in future projects)				280,000	0	280,000	11,000	291,000
		Concrete path	ft	1,250	67	83,841				
		Fire main	ft	1,500	40	60,000				
		Fire hydrant	No	5	2,000	10,000				
		Allowance for additional earthworks & drainage	LS	1	30,000	30,000				
		Allowance for landscaping and 2No. Thatched roof study hut, solar panel & picnic table	No	4	7,000	28,000				
		Sub-Total				211,841				
		A & E allowance %	%	211,841	0.15	31,776				
		Sub-total				243,618				
		Contingency allowance %	%	243,618	0.15	36,543				
		Rounding				- 160				
		<b>Total Vehicle Route through Campus</b>				<b>280,000</b>				
2	Relocate building K functions (TRIO program) to top floor of PSBDC	Assume \$5K for soft fit-out including fees & contingency				5,000	0	5,000	0	5,000
3	Demolish Building K	Assume \$100K	No	1	100000	100,000	0	100,000	5,000	105,000
4	Demolish the electronics building	Assume \$20K	No	1	20000	20,000	0	20,000	1,000	21,000
5	New technical education classroom building along the boundary on the upper campus	Building area excludes covered ways	ft2	3200		1,310,000	50,000	1,360,000	60,000	1,420,000
		Building area excludes covered ways	ft2	3,500	240	840,895				
		Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				
		Sub-total				990,895				

		A&E allowance %	990,895	0.15		148,634				
						1,139,529				
		Contingency allowance %	1,139,529	0.15		170,929				
		Rounding				-	458			
		<b>Total Technical Education Classroom Building</b>					<b>1,310,000</b>			
	Fit-out - assume \$10/ft2	ft2	3,500	10		35,000				
		A&E allowance %	35,000	0.15		5,250				
						40,250				
		Contingency allowance %	40,250	0.15		6,038				
		Rounding					3,712			
		<b>Total Technical Education Classroom Fit-out</b>					<b>50,000</b>			
6	New multipurpose technical education building along the boundary on the upper campus (Building 2)	Building area excludes covered ways	ft2	4000		1,470,000	55,000	1,525,000	75,000	1,600,000
		Building area excludes covered ways	ft2	4,000	240	961,023				
		Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				
		Sub-total				1,111,023				
		A&E allowance %	1,111,023	0.15		166,653				
						1,277,676				
		Contingency allowance %	1,277,676	0.15		191,651				
		Rounding					673			
		<b>Total Technical Education Classroom Building</b>					<b>1,470,000</b>			
		Fit-out - assume \$10/ft2	ft2	4,000	10	40,000				
		A&E allowance %	40,000	0.15		6,000				
						46,000				
		Contingency allowance %	46,000	0.15		6,900				
		Rounding					2,100			
		<b>Total Technical Education Classroom Fit-out</b>					<b>55,000</b>			
7	Wifi connectivity	Excluded - assume part of separate Technology budget				0	0	0	0	0
8	Site works associated with the new technical education buildings including rationalizing vehicle access, parking lot, signage, pedestrian connections, perimeter and structured planting					320,000	0	320,000	15,000	335,000
		Access way approx. 450 x 12ft wide	ft2	5,400	11	60,201				
		Entry & Exit crossings	No	2	5,000	10,000				
		Footpaths assume 10ft wide	ft	850	67	56,999				
		Bus bay & shelters & staff parks	LS	1	50,000	50,000				
		Allowance for drainage	LS	1	20,000	20,000				
		Allowance for additional earthworks	LS	1	10,000	10,000				
		Allowance for landscaping	LS	1	15,000	15,000				
		Allowance for carpark lighting	No	2	5,000	10,000				
						232,199				
		A & E allowance %	232,199	0.15		34,830				
		Sub-total				267,029				
		Contingency allowance %	267,029	0.15		40,054				
		Rounding					12,916			
		<b>Total Vehicle Access</b>					<b>320,000</b>			

9	Create a public face for the upper campus with new signage and entry points	Assume \$25K including fees and contingency	LS	1	25000	25,000	0	25,000	1,000	26,000
10	New facility for LRC	Building area excludes covered ways	ft2	2900		1,120,000	40,000	1,160,000	45,000	1,205,000
		Building area excludes covered ways	ft2	2,900	240	696,741				
		Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				
		Sub-total				846,741				
		A&E allowance	%	846,741	0.15	127,011				
						973,753				
		Contingency allowance	%	973,753	0.15	146,063				
		Rounding				184				
		<b>Total New LRC Building</b>				<b>1,120,000</b>				
		Fit-out - assume \$10/ft2	ft2	2,900	10	29,000				
		A&E allowance	%	29,000	0.15	4,350				
						33,350				
		Contingency allowance	%	33,350	0.15	5,003				
		Rounding				1,647				
		<b>Total LRC Fit-out</b>				<b>40,000</b>				
11	Demolish bookstore	Assume \$30K	No	1	30000	30,000	0	30,000	2,000	32,000
12	Walkway connecting high level buildings to lower level access road, access route from elementary school to top of the site as an alternative access	Assume 10ft wide timber		450		275,000	0	275,000	10,000	285,000
		10ft wide timber boardwalk	ft	450	457	205,793				
		A & E allowance	%	205,793	0.15	30,869				
		Sub-total				236,662				
		Contingency allowance	%	236,662	0.15	35,499				
		Rounding				2,839				
		<b>Total Formed Paths</b>				<b>275,000</b>				
<b>TOTAL Pohnpei 5 year vision to 2018</b>						<b>4,955,000</b>	<b>145,000</b>	<b>5,100,000</b>	<b>225,000</b>	<b>5,325,000</b>
<b>10 year vision to 2023 (2019 to 2023)</b>										
13	Demolish carpentry and mechanical building	Assume \$30K	No	1	30000	30,000	0	30,000	1,000	31,000
14	New multipurpose technical education building at the upper campus entry with area for maintenance and storage	Building area excludes covered ways	ft2	1800		740,000	25,000	765,000	35,000	800,000
		Building area excludes covered ways	ft2	1,800	240	432,460				
		Allowance for landscaping	LS	1	50,000	50,000				
		Allowance for earthworks, siteworks & drainage	LS	1	75,000	75,000				
		Sub-total				557,460				
		A&E allowance	%	557,460	0.15	83,619				
						641,079				
		Contingency allowance	%	641,079	0.15	96,162				
		Rounding				2,759				
		<b>Total Multi-Purpose Building</b>				<b>740,000</b>				

Fit-out - assume \$10/ft2	ft2	1,800	10	18,000
A&E allowance	%	18,000	0.15	2,700
				20,700
Contingency allowance	%	20,700	0.15	3,105
Rounding				1,195
<b>Total Multi-Purpose Fit-out</b>				<b>25,000</b>

15 Relocate Land Grant to top floor of PSBDC and remove COM Land Grant and re-landscape front of PSBDC			175,000	0	175,000	10,000	<b>185,000</b>
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Allowance to demo Land Grant Building - assume \$30K	LS	1	30,000	30,000
Allowance for landscaping PSBDC	LS	1	100,000	100,000
				130,000
A & E allowance	%	130,000	0.15	19,500
Sub-total				149,500
Contingency allowance	%	149,500	0.15	22,425
Rounding				3,075
<b>Total Vehicle Access</b>				<b>175,000</b>

**TOTAL Pohnpei 10 Year Vision (2019 to 2023)**

<b>945,000</b>	<b>25,000</b>	<b>970,000</b>	<b>46,000</b>	<b>1,016,000</b>
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**Long term vision - beyond 2023**

16 Turn around area in front of administration with a one way entry and exit	Assume \$50K for entry turning bay		50,000	0	50,000	3,000	<b>53,000</b>
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17 Two storey building at the front gate of the lower campus for administration and faculty (Building 5)			4,700,000	170,000	4,870,000	230,000	<b>5,100,000</b>
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Building 5 - Administration, Faculty & Classroom	ft2	12,500	260	3,247,952
Allowance to demolish Hospitality, Tourism & Building B	LS	1	50,000	50,000
Allowance for landscaping	LS	1	100,000	100,000
Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000
				3,547,952
Sub-total				3,547,952
A&E allowance	%	3,547,952	0.15	532,193
				4,080,144
Contingency allowance	%	4,080,144	0.15	612,022
Rounding				7,834
<b>Total Buildings 1,2 &amp; 3</b>				<b>4,700,000</b>

Fit-out - assume \$10/ft2	ft2	12,500	10	125,000
A&E allowance	%	125,000	0.15	18,750
				143,750
Contingency allowance	%	143,750	0.15	21,563
Rounding				4,687
<b>Total Admin &amp; Faculty Fit-out</b>				<b>170,000</b>

18 Demolish administration building	Assume \$30K	No	1	30000	30,000	0	30,000	2,000	<b>32,000</b>
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19 Increased carpark area in the lower campus and landscaped small study area, outdoor volleyball area, eating space				630,000	0	630,000	30,000	660,000
	Drive way & parking area	ft2	26,000	11	289,856			
	Entry & Exit crossings	No	2	5,000	10,000			
	Footpaths assume 10ft wide	ft	300	67	20,122			
	Bus bay & shelters & staff parks	LS	1	50,000	50,000			
	Allowance for drainage	LS	1	30,000	30,000			
	Allowance for additional earthworks	LS	1	20,000	20,000			
	Allowance for landscaping	LS	1	30,000	30,000			
	Allowance for carpark lighting	No	5	5,000	25,000			
					474,978			
	A & E allowance	%	474,978	0.15	71,247			
	Sub-total				546,224			
	Contingency allowance	%	546,224	0.15	81,934			
	Rounding				1,842			
	<b>Total Vehicle Access</b>				<b>630,000</b>			
<b>TOTAL Pohnpei Long Term Vision (Beyond 2023)</b>				<b>5,410,000</b>	<b>170,000</b>	<b>5,580,000</b>	<b>265,000</b>	<b>5,845,000</b>
<b>Further projects (not in order of priority)</b>								
20 Solar power generation	Assume \$500K including associated buildings, fees and contingency	LS	1	500000	500,000	0	500,000	525,000
Works to increase drainage capacity - swales and subsoil drainage	Assume \$150K including fees & contingency	LS	1	150000	150,000	0	150,000	155,000
Fire fighting hydrants through site	Assume 1,500ft additional fire main				170,000	0	170,000	190,000
	Fire main	ft	1,500	40	60,000			
	Fire hydrant - assumed	No	8	2,000	16,000			
	Allowance for fire water storage, pumps & pipework	LS	1	50,000	50,000			
	Sub-Total				126,000			
	A & E allowance	%	126,000	0.15	18,900			
	Sub-total				144,900			
	Contingency allowance	%	144,900	0.15	21,735			
	Rounding				3,365			
	<b>Total Fire Mains &amp; Hydrants</b>				<b>170,000</b>			
<b>TOTAL Pohnpei Future Projects</b>				<b>820,000</b>	<b>0</b>	<b>820,000</b>	<b>50,000</b>	<b>870,000</b>
<b>GRAND TOTAL POHNPEI CAMPUS</b>								
TOTAL Pohnpei 5 Year Period to 2018				4,955,000	145,000	5,100,000	225,000	5,325,000
TOTAL Phonpei 10 Year Vision (2019 to 2023)				945,000	25,000	970,000	46,000	1,016,000
TOTAL Phonpei Long Term Vision (Beyond 2023)				5,410,000	170,000	5,580,000	265,000	5,845,000
TOTAL Future Projects (Ponphei)				820,000	0	820,000	50,000	870,000
<b>GRAND TOTAL POHNPEI CAMPUS</b>				<b>12,130,000</b>	<b>340,000</b>	<b>12,470,000</b>	<b>586,000</b>	<b>13,056,000</b>



COM-FSM Space Utilization and Facilities Study Rough Order of Cost Estimate Summary - Kosrae Campus (November 2013)		Limitations, Assumptions, Inclusions & Exclusions	Unit	Quantity	Rate \$USD	Buildings, Services & Siteworks \$USD (2013 cost)	Allowance for Fit- out \$USD (2013 cost)	TOTAL \$USD (2013 cost)	Allowance for Escalation (3.4% pa)	TOTAL Escalated Cost \$USD
All Projects										
a	These are 'rough order of cost' estimates based on highly conceptual information and have an accuracy range that is no better than +/-20%. All estimates need to be confirmed prior to funding application & construction									
b	Fit-out costs (desks, chairs & loose furniture only) assumed at \$10/ft2									
c	No allowance for data projectors, screens, computers, printers, photo-copiers etc									
d	Architectural & Engineering fees and contingency allowances have been included									
e	Escalation has been assumed at the rate of 3.4% per annum. November 2013 has been used as the base date for escalation.									
f	Property purchase or leasing costs are excluded									
g	Taxes, duties and fees are excluded on all projects									
Kosrae 5 year period to 2018										
1	IT server in a secure environment in the existing administration building	Assume 250ft2 space inside existing building		250		40,000	0	40,000	2,000	42,000
		Retro-fit existing floor space	ft	250	112	27,881				
		Allowance for fan coil unit	No	1	3,000	3,000				
						30,881				
		A & E allowance	%	30,881	0.15	4,632				
		Sub-total				35,513				
		Contingency allowance	%	35,513	0.15	5,327				
		Rounding				- 840				
		Total IT Server Room				40,000				
2	Upgraded Wifi	Excluded - assume part of separate Technology budget				0	0	0	0	0
3	Open side shelters for charging electronics and outdoor study (4 off)	Assume traditional 'thatched' roof structure approx. 15 x 10ft with picnic table	No	4		40,000	0	40,000	2,000	42,000
		Shelter structure & roof	No	4	5,000	20,000				
		Allowance for solar panel & wiring	No	4	1,500	6,000				
		Allowance for picnic table	No	4	500	2,000				
						28,000				
		A & E allowance	%	28,000	0.15	4,200				
		Sub-total				32,200				
		Contingency allowance	%	32,200	0.15	4,830				
		Rounding				2,970				
		Total IT Server Room				40,000				
4	Consolidate student services functions in a multifunctional building - stage 1 two storey building	Building area excludes covered ways	ft2	9,100		3,225,000	120,000	3,345,000	130,000	3,475,000
		Building area excludes covered ways	ft2	9,100	240	2,186,327				
		Allowance for earthworks, siteworks & drainage	LS	1	250,000	250,000				
		Sub-total				2,436,327				
		A&E allowance	%	2,436,327	0.15	365,449				
						2,801,776				
		Contingency allowance	%	2,801,776	0.15	420,266				
		Rounding				2,958				
		Total Multi-functional Building (Stage 1)				3,225,000				

Fit-out - assume \$10/ft2	ft2	9,100	10	91,000
A&E allowance	%	91,000	0.15	13,650
				104,650
Contingency allowance	%	104,650	0.15	15,698
Rounding				348
<b>Total Multi-functional Fit-out (Stage 1)</b>				<b>120,000</b>

5 Site works associated with multifunctional entry building - carpark, streamside works along the length of the new building , landscaping, signage, pedestrian connections, perimeter and structured planting		560,000	0	560,000	20,000	<b>580,000</b>
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Carparks	No	33	3,500	115,500
Entry & Exit crossings	No	1	5,000	5,000
Entry turning circle area	ft2	10,000	10	99,996
Footpaths assume 10ft wide	ft	900	45	40,509
Allowance for drainage to car park	LS	1	15,000	15,000
Allowance for additional earthworks	LS	1	10,000	10,000
Allowance for Streamside works - assume scour protection to building only	ft	200	500	100,000
Allowance for landscaping	LS	1	20,000	20,000
Allowance for signage	LS	1	5,000	5,000
Allowance for carpark lighting	No	2	5,000	10,000
				421,005
A & E allowance	%	421,005	0.15	63,151
Sub-total				484,156
Contingency allowance	%	484,156	0.15	72,623
Rounding				3,221
<b>Total Multi-functional Building Siteworks</b>				<b>560,000</b>

6 Recreational area - outdoor basketball/ volleyball space and associated landscape works	Assumes 1No court x 4,700ft2. Excludes roof covering and lighting	No	150,000	0	150,000	5,000	<b>155,000</b>
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Concrete slab	ft2	4,700	8	37,600
Allowance for earthworks & drainage	LS	1	20,000	20,000
Perimeter fencing	ft2	700	46	32,003
Allowance for landscaping & nominal seating	LS	1	10,000	10,000
Allowance for backboards, markings etc	LS	1	12,400	12,400
Sub-total				112,003
A&E allowance	%	112,003	0.15	16,800
				128,803
Contingency allowance	%	128,803	0.15	19,321
Rounding				1,876
<b>Total Basketball Court</b>				<b>150,000</b>

7 Relocate carpentry and other voced functions to eastern end of Block J away from the main entry and LRC and retrofit space to faculty and/ or administration functions	Assume \$20K including electrical to move equipment and construct 1No. New wall		30,000	0	30,000	1,000	<b>31,000</b>
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Assume \$20K including electrical	LS	1	20,000	20,000
Sub-total				20,000
A&E allowance	%	20,000	0.15	3,000
				23,000

					Contingency allowance % Rounding	23,000	0.15	3,450 3,550			
								30,000			

Fit-out - assume \$10/ft2	ft2	2,400	10	24,000
A&E allowance	%	24,000	0.15	3,600
				27,600
Contingency allowance	%	27,600	0.15	4,140
Rounding			-	1,740
<b>Total Multi-functional Fit-out (Stage 2)</b>				<b>30,000</b>

12 Relocation and fitout of specialized science classroom and general classroom into Block J. Demolish old specialized science classroom and landscape area left behind with trees and study huts	ft2	4100		220,000	0	220,000	10,000	<b>230,000</b>
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Relocate existing benches and fume cupboard to Block J including new plumbing, electrical & bottled gas	LS	1	50,000	50,000
Allowance for refurbishment of new science classroom	LS	1	10,000	10,000
Allow for demolition of existing building (A) Admin & Science	LS	1	40,000	40,000
Allowance for landscaping	LS	1	50,000	50,000
Allowance for landscaping and 2No. Thatched roof study hut, solar panel & picnic table	No	2	7,000	14,000
Sub-total				164,000
A&E allowance	%	164,000	0.15	24,600
				188,600
Contingency allowance	%	188,600	0.15	28,290
Rounding				3,110
<b>Total Science Room Relocation</b>				<b>220,000</b>

13 Pedestrian bridge across to southern streamside bank and level area for covered open sided multipurpose drama/ recreation space - ability to seat up to 300	Asume 4,500ft2 covered / open sided space	No	1	1,050,000	0	1,050,000	50,000	<b>1,100,000</b>
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Allow for bridge (50ft long)	No	1	50,000	50,000
Allowance for covered open space to seat 300 people - assume 15ft2/person	ft2	4,500	139	627,090
Allowance for public address & data projection	LS	1	15,000	15,000
Allowance for toilet block & changing rooms	LS	1	100,000	100,000
Sub-total				792,090
A&E allowance	%	792,090	0.15	118,814
				910,904
Contingency allowance	%	910,904	0.15	136,636
Rounding				2,461
<b>Total Bridge &amp; Drama/Recreation Space</b>				<b>1,050,000</b>

14 New storage and maintenance building (Building 2)	ft2			360,000	25,000	385,000	20,000	<b>405,000</b>
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Metal clad steel frame industrial building	ft2	2,000	110	220,965
Allowance for earthworks, siteworks & drainage	LS	1	50,000	50,000
Sub-total				270,965
A&E allowance	%	270,965	0.15	40,645
				311,610
Contingency allowance	%	311,610	0.15	46,742
Rounding				1,648

<b>Total Storage &amp; Maintenance Building</b>					<b>360,000</b>				
Fit-out - assume \$10/ft2	ft2	2,000	10	20,000					
A&E allowance	%	20,000	0.15	3,000					
				23,000					
Contingency allowance	%	23,000	0.15	3,450					
Rounding				-	1,450				
<b>Total Storage &amp; Maintenance Fit-out</b>					<b>25,000</b>				
15 Demolish existing maintenance office and building - landscape works along the streamside	Assume \$15K Demolition	No	1	150,000	0	150,000	10,000	160,000	
	Demolish Maintenance building	No	1	15,000	15,000				
	Allowance for landscaping & study huts alongside stream	LS	1	100,000	100,000				
	Sub-total				115,000				
	A&E allowance	%	115,000	0.15	17,250				
					132,250				
	Contingency allowance	%	132,250	0.15	19,838				
	Rounding				-	2,088			
<b>Total Maintenance Demolition &amp; Landscaping</b>					<b>150,000</b>				
<b>TOTAL Kosrae 10 Year Vision (2019 to 2023)</b>					<b>2,880,000</b>	<b>55,000</b>	<b>2,935,000</b>	<b>145,000</b>	<b>3,080,000</b>
<b>Kosrae Long term vision - beyond 2023</b>									
16 New CRE - extension building (Building 3) either at research building site or in the community interface activity zone (2 storey)	Building area excludes covered ways	ft2	3,800	1,570,000	100,000	1,670,000	80,000	1,750,000	
	Building area excludes covered ways	ft2	3,800	260	987,377				
	Allowance for lanscaping & paths	LS	1	50,000	50,000				
	Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				
	Sub-total				1,187,377				
	A&E allowance	%	1,187,377	0.15	178,107				
					1,365,484				
	Contingency allowance	%	1,365,484	0.15	204,823				
	Rounding				-	306			
<b>Total New CRE Extension Building</b>					<b>1,570,000</b>				
	Fit-out - assume \$10/ft2	ft2	3,800	10	38,000				
	Allow additional fit-out for Research area	ft2	3,800	10	38,000				
	A&E allowance	%	76,000	0.15	11,400				
					87,400				
	Contingency allowance	%	87,400	0.15	13,110				
	Rounding				-	510			
<b>Total New CRE Extension Fit-out</b>					<b>100,000</b>				
17 New Learning Resource Center (Building 4) and associated landscape works, pedestrian connections (2 storey)				2,425,000	100,000	2,525,000	121,000	2,646,000	
	Building area excludes covered ways	ft2	7,000	240	1,681,790				
	Allowance for earthworks, siteworks & drainage	LS	1	150,000	150,000				



**GRAND TOTAL KOSRAE CAMPUS**

TOTAL Kosrae 5 Year Period to 2018	4,450,000	120,000	4,570,000	175,000	4,745,000
TOTAL Kosrae 10 Year Vision (2019 to 2023)	2,880,000	55,000	2,935,000	145,000	3,080,000
TOTAL Kosraei Long Term Vision (Beyond 2023)	4,555,000	200,000	4,755,000	231,000	4,986,000
TOTAL Future Projects (Kosrae)	1,130,000	0	1,130,000	55,000	1,185,000
<b>GRAND TOTAL KOSRAE CAMPUS</b>	<b>13,015,000</b>	<b>375,000</b>	<b>13,390,000</b>	<b>606,000</b>	<b>13,996,000</b>