

DIVISION OF FACILITIES MANAGEMENT  
Planning, Design and Construction

# CSU Learning and Teaching Space 2017 Utilisation Report

Version No: 1.0 | June 2017



## Executive Summary

As part of Charles Sturt University's (CSU) ongoing review of learning and teaching space utilisation, this report outlines the analysis of a subset of 61 spaces for the duration of the 2017 Session 1, Week 13 (20/03/17 to 24/03/17). This report provides an analytical overview for the Port Macquarie Campus, Engineering Building at the Bathurst Campus, the Wal Fife Lecture Theatre at the Wagga Wagga Campus and University Computer Laboratories utilisation. Sources of contributing data included Syllabus Plus (Timetabling), Banner Student, Archibus (Space Planning) and audit data. Analysis and reporting was conducted by the Division of Facilities Management.

This year's learning and teaching space study has been limited in scope to target spaces of interest to the University. This has resulted in a more focused and streamlined report. Key findings of this report show:

- The Port Macquarie Campus in tandem with the SHREC facility shows strong booking frequency however analysis indicates spaces are not optimally utilised.
- The Bathurst Campus Engineering Building is used as a flexible learning and teaching environment but is quite underutilised. The inclusion of additional learning and teaching activities from other campus stakeholders may make use of both excellent facilities and drive utilisation.
- Wagga Wagga's Wal Fife building is the premier learning and teaching facility on the Boorooma Precinct with a combination of newly renovated tiered lecture theatres and flat floor spaces offering both enhanced technology and learning flexibility. However, post renovation, the facility suffers with low actual seat occupancy statistics compared to timetabled levels.
- Computer Laboratory space utilisation figures indicate diverse usage across the campuses. A number of spaces which are exclusively bookable by schools show little or no utilisation. Analysis within this report will be used as the basis for a project to review the future needs for such spaces across the University with the intent to rationalise under-used laboratories.

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## 1.0 Introduction

The purpose of this report is to provide an assessment of the utilisation of specific learning and teaching spaces at Charles Sturt University (CSU) for the 2017 Session 1 sessional teaching period. This review took place between March 20<sup>th</sup> and March 24<sup>th</sup>, 2017 during normal teaching hours, 8am to 6pm each day. Review scope has increased from the 9am to 5pm timeframe used in previous reports. Learning and teaching spaces are a key element to the fabric of CSU's campuses. The Division of Facilities Management (DFM) in collaboration with the Division of Student Administration (DSA) has, this year, chosen to audit a subset of sixty one spaces combined with a full review of associated timetable data (Section 1.1).

Space utilisation measures how intensively space is used, based on the analysis of both timetable and audit data. It is the frequency of hours of use expressed as a percentage of the teaching day (Room Frequency Factor) multiplied by the percentage of occupied seats (Seat Occupancy Factor).

This report draws upon four key sources of data. Spatial data relating to learning and teaching spaces is sourced from Archibus, CSU's enterprise space management system that acts as the central repository for University space and property data. Timetabling data for the 61 learning and teaching spaces is acquired from Syllabus Plus, the University's enterprise timetabling scheduler along with subject data extracted from Banner Student. The fourth data source relates to information obtained from an audit of targeted spaces in the 2017 Session 1 facilities on six university campuses.

Data analysis and reporting was undertaken by the DFM who wish to acknowledge the (DSA) as a key report stakeholder.

### 1.1 Scope

This report provides an analysis of learning and teaching space utilisation in CSU's 2017 Session 1, week 13 at the 6 major university campuses (20/03/17 to 24/03/17). A decision was made to audit a subset of 61 timetabled spaces:

- Port Macquarie Campus, both Pitkin House (801) and Shared Health Research and Education Campus, (3013, SHREC).
- Engineering Building (1305) in the Bathurst Campus.
- Wal Fife Building (14) in the Wagga Wagga Campus.
- All Computer Laboratories across the University campuses including Albury-Wodonga, Bathurst, Dubbo, Orange, Port Macquarie and Wagga Wagga.

The full listing of the spaces audited and the individual utilisation metrics is included in Section 7.0 (Appendix). All other CSU campuses and sites have been excluded from this report.

## 1.2 Governance

This document provides a review of space utilisation across the University 2017 Session 1 for targeted learning and teaching spaces. The following organisational stakeholders have been identified:

- Division of Facilities Management (DFM)
- Division of Student Administration (DSA)
- Division of Information Technology (DIT)
- Division of Student Learning (DSL)
- Office for Students (OfS)
- Faculty of Science (FoS)
- Faculty of Arts and Education (FoAE)
- Faculty of Business, Justice and Behavioural Sciences (FoBJBS)

This document will be tabled with three organisational committees within CSU:

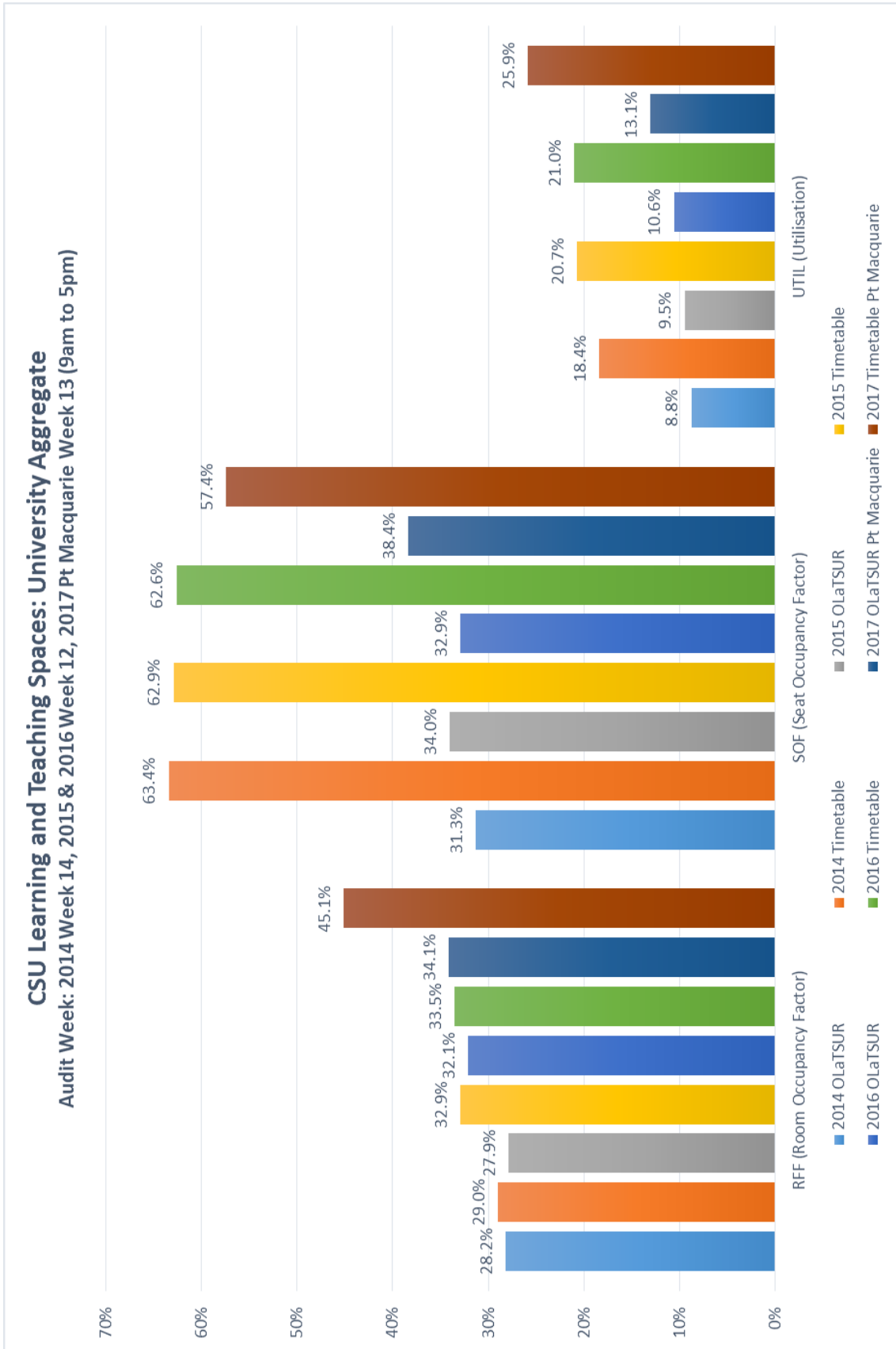
1. Timetable Governance Committee
2. Capital Planning Committee
3. Learning Environments Committee

## 2.0 Port Macquarie Campus Aggregate Data

Results represented in this section relate to two main data sources. Firstly, timetable data and secondly, audit data. The physical audit constituted thirty spaces within two buildings covering all learning and teaching spaces on the campus. This is the first study of learning and teaching space performance for the newly built campus and serves as an important benchmark to monitor ongoing use from both a timetabling and student attendance perspective. Comparative analysis with 2016 is limited as the new campus has a vastly different configuration to the previous Munster and Grant Street facilities. Audit utilisation in 2017 (11.3%) is less than in 2016 (20.7%) (Figure 3), however there are many factors which would attribute to this difference, including the larger campus, design intent for increases in courses and student enrolments along with varied learning and teaching spaces at Pitkin House and SHREC. Aggregated data in Figure 2 outlines audit and timetable frequency, occupancy and utilisation statistics specific to the Pitkin House (801) and SHREC building (3103) on the Port Macquarie Campus. This identifies that audited spaces are underutilised and shows a significant deviation from the timetable data. Also Pitkin House shows much greater utilisation than SHREC.

Port Macquarie Campus, S1 2017	Room Frequency Factor (RFF)	Seat Occupancy Factor (SOF)	Utilisation (UTIL)
Audit	29.5%	38.3%	11.3%
Timetable	39.7%	57.0%	22.6%

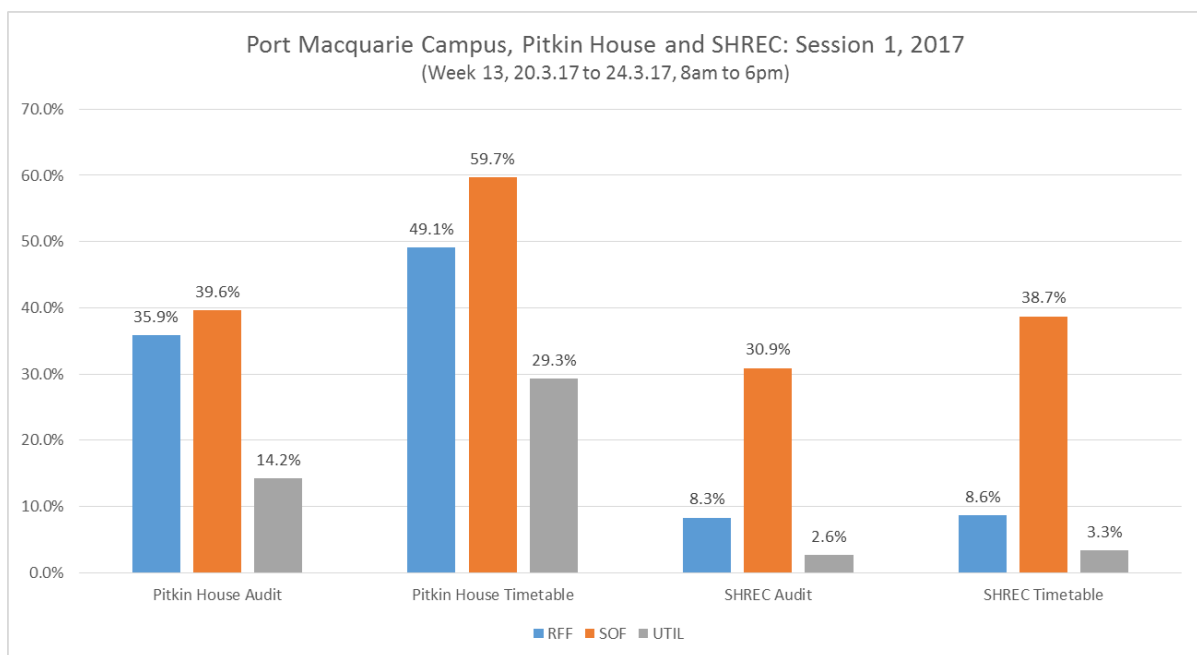
**Table 1** - Port Macquarie Campus, Pitkin House (801) and SHREC (3103), Session 1 2017: Specific utilisation metrics.



**Figure 1** - Comparative audit and timetable metrics for all university campuses (2014-2016) and the Port Macquarie Campus (2017) illustrating improved timetable efficiency. Whilst an improvement, audit analysis did not fully reflect timetable view. Note 2017 data has been modified to align to a 9am to 5pm teaching day in line with historical studies.

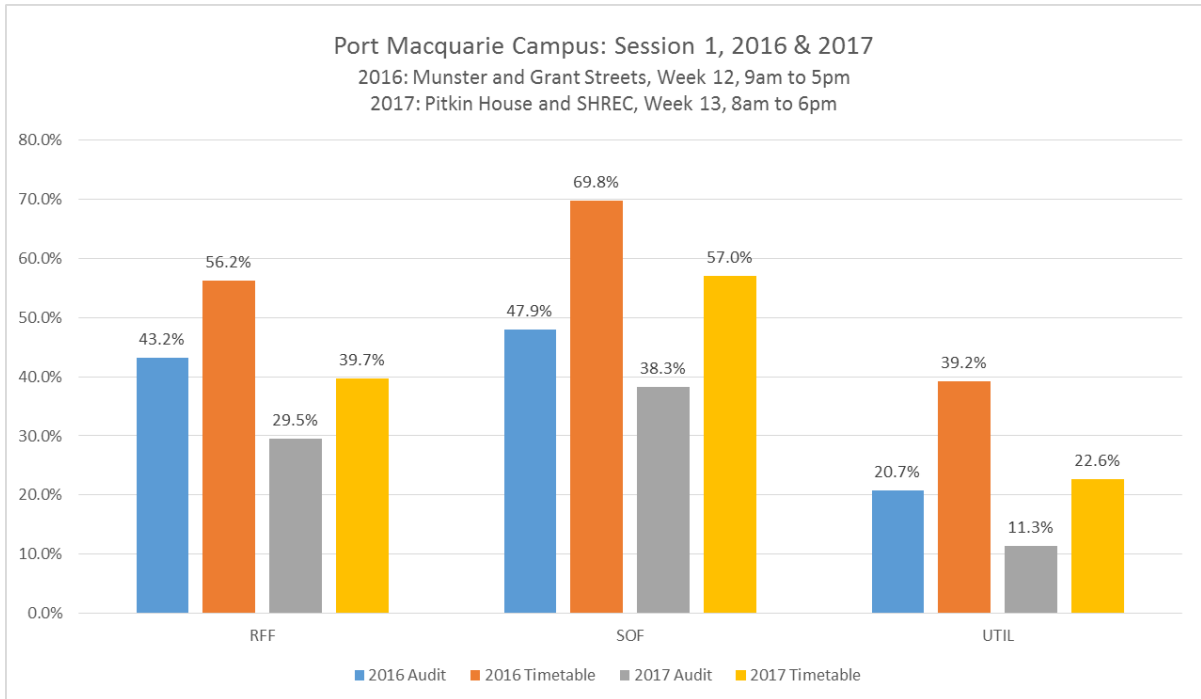
Of interest are three factors:

- Low overall utilisation measures when timetable is compared to audit (Figures 2 & 3). This indicates a real world utilisation in 2017 being significantly less than officially reported timetable figures, ie: 11.3%, Audit compared to 22.6%, Timetable (refer Table 1). This however represents better space utilisation performance when compared with the University average over time (Figure 1).
- Comparative analysis between audit and timetable data indicates variations in Room Frequency Factor measures.
- Comparative analysis between audit and timetable data shows significant gaps between expected and experienced Seat Occupancy Factors measures. This figure has been a consistent factor in influencing low utilisation measures over past years of data analysis.



**Figure 2** - Port Macquarie Campus audit and timetable frequency, occupancy and utilisation, 2017 Session 1.

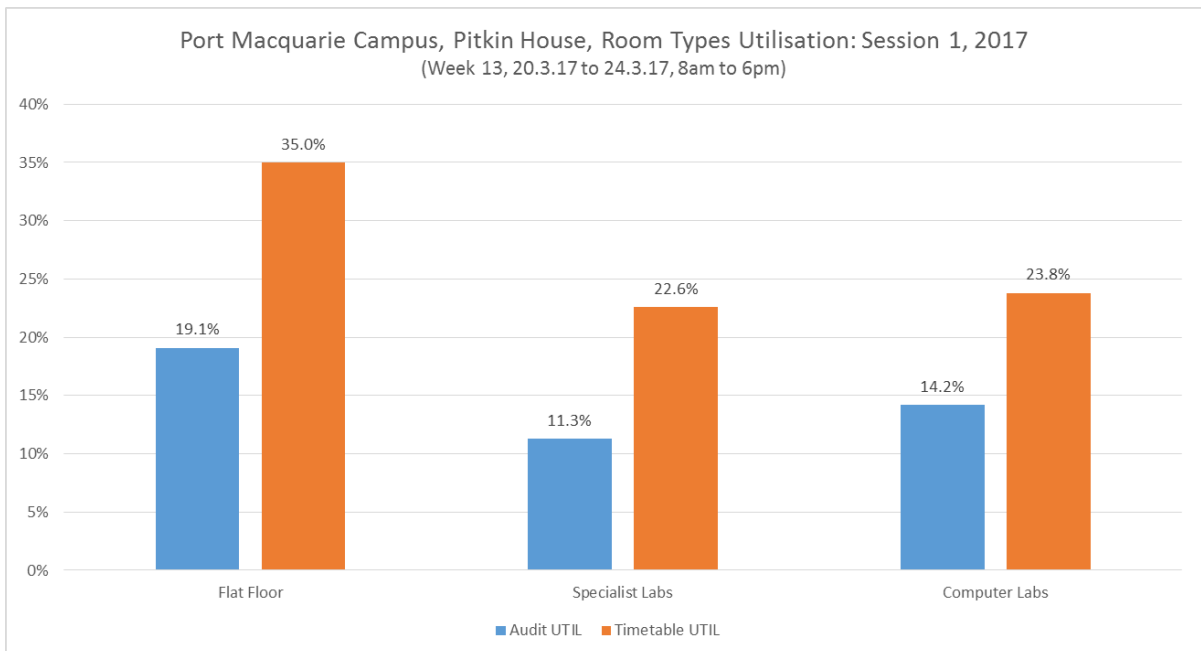
Analysis of utilisation data highlights a variance between audit and timetable data. Room frequency data (RFF) over the period indicates a general trend whereby learning and teaching space that had timetabled events scheduled were empty at the time of audit (Figures 2 & 3). This can be interpreted as an overbooking of timetable booked classes or, for reasons relating to enrolment versus forecast, classes may not have been needed and the timetable not updated to reflect actual academic needs. An initial analysis of the gap between audit and timetable has been completed with data provided to DSA for detailed review. This will assist with the fine tuning performance of timetabled spaces on the campus and provide insight related to planning for the development of phase two. Seat occupancy (SOF) metrics indicate a significant gap between what was anticipated in the timetable and what the auditors accounted for (Figures 2 & 3). There are numerous dynamics influencing these results and within this area alone there is significant body of academic literature discussing potential factors.



**Figure 3 - Port Macquarie Campus, Comparison between 2016 and 2017 Audit and Timetable Utilisation.**

## 2.1 Port Macquarie Campus (Pitkin House) Utilisation by Room Type

Analysis of the three room types show a marked contrast between the timetable and audit results (Figure 4). The divergence is greatest in the Specialist Laboratories which may be linked to the exclusive nature of the custodianship of these spaces. Refer to Appendix 7.1 for the complete list of spaces and relevant utilisation metrics. The utilisation of the Computer Laboratory on campus was less than the timetable with audit metrics including use outside of scheduled times.

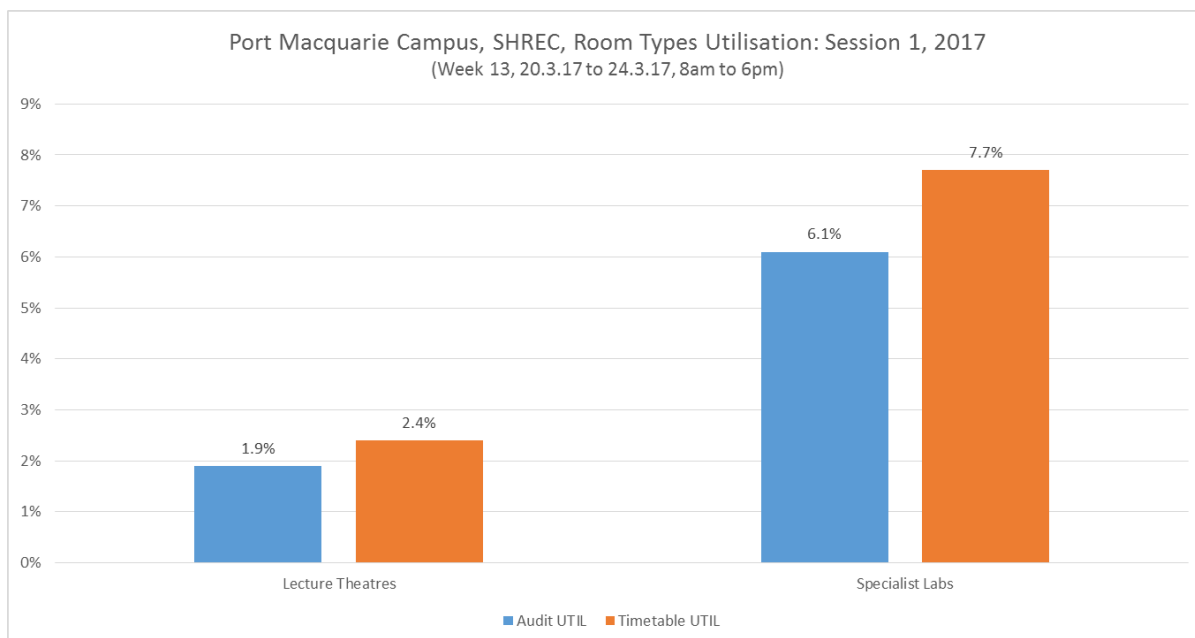


**Figure 4 - Port Macquarie Campus (Pitkin House) Audit and Timetable Utilisation by Room Type.**



## 2.2 Port Macquarie Campus (SHREC) Utilisation by Room Type

Analysis of the two room types selected in the review all show a generally close alignment between audit and timetable utilisation (Figure 5). With this said, given the relatively small number of classes held in the facility contrast between the timetable and audit results does present an opportunity to further refine timetable performance for the facility.



**Figure 5** - Port Macquarie Campus (SHREC) Audit and Timetable Utilisation by Room Type

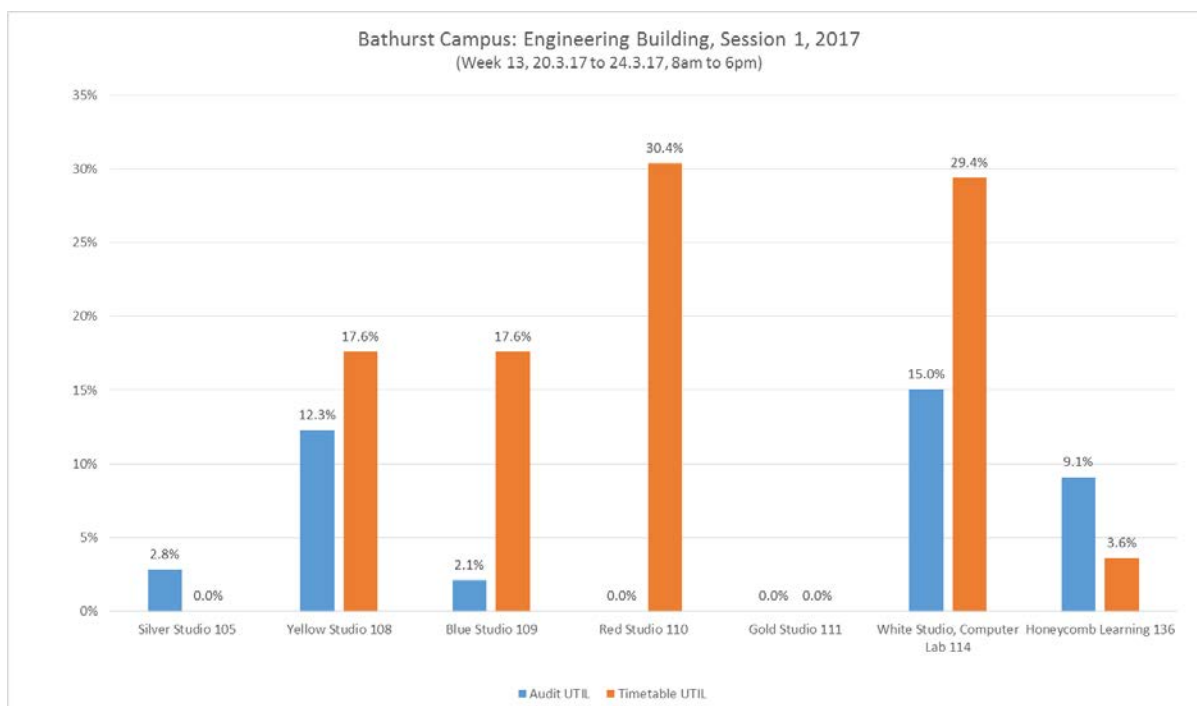
## 3.0 Bathurst Campus Engineering Building (1305)

The Engineering Building at Bathurst Campus was reviewed so as to give a benchmark for overall learning and teaching space performance. It is evident the building is not being used at the level that is projected in the timetable, with some rooms still being empty, notably the Gold Studio, Room 111, (Figure 6).

The room frequency factor is higher in the audit than in the timetable probably showing the flexible use of the spaces rather than just the timetabled classes. However the seat occupancy factor is considerably lower so that the expected number of students attending the classes is less in the audit week than was envisaged. Consequently the utilisation rate is lower, with the audit revealing 4.8% compared to the timetabled expected rate of 13.2%, (refer Table 2).

Engineering Building (1305), Bathurst Campus, S1 2017	Room Frequency Factor (RFF)	Seat Occupancy Factor (SOF)	Utilisation (UTIL)
Audit	35.4%	13.4%	4.8%
Timetable	25.7%	51.5%	13.2%

**Table 2** - Bathurst Campus, Engineering Building (1305) Session 1 2017: Specific utilisation metrics.



**Figure 6 - Bathurst Campus 2017 Session 1: Engineering Building (1305) Utilisation by Audit and Timetable**

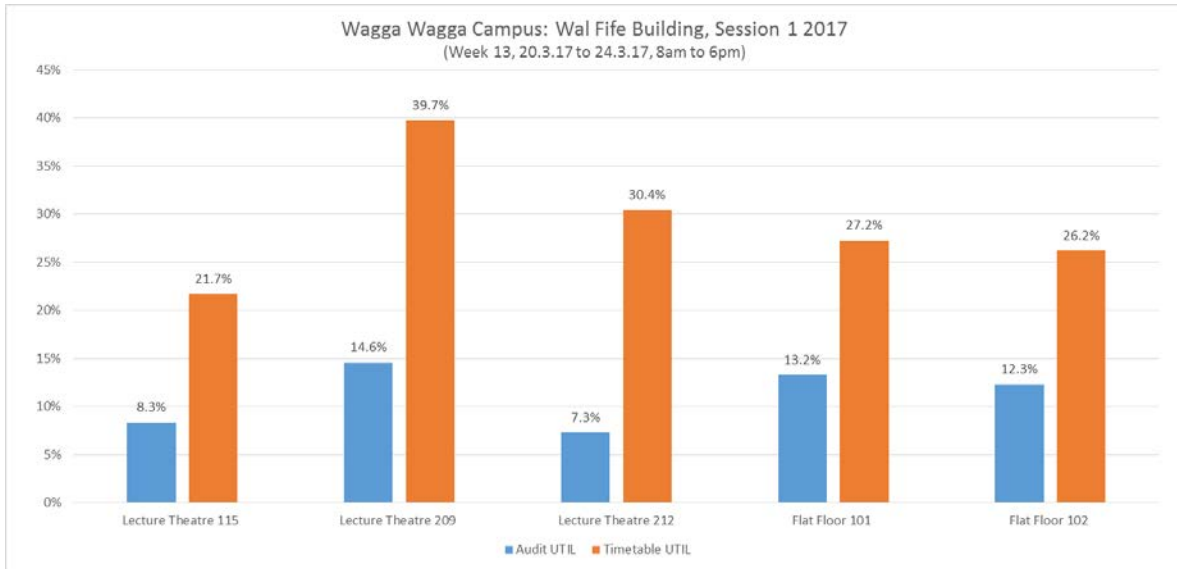
It should be noted that the undergraduate Engineering program is in its second year of intake and the program only has an 18 month on campus load therefore utilisation is expected to be less than the overall capacity of the building. Given the collaborative nature of this building’s learning and teaching space design which have been driven by innovative pedagogies, there is scope to open up these spaces for additional timetable activities by additional academic stakeholders on campus. Besides driving utilisation the premium learning environment may facilitate an enhanced learning experience and more positive student outcomes.

#### 4.0 Wagga Wagga Campus Wal Fife Building (14)

In alignment with the current capital planning strategy of learning and teaching space renewal, significant project works were undertaken on the Wal Fife Theatre building in readiness for 2016 sessional teaching. At a capital cost of \$2 million, the building and all of its learning and teaching spaces were significantly upgraded resulting in this building being the premier facility for learning and teaching on campus.

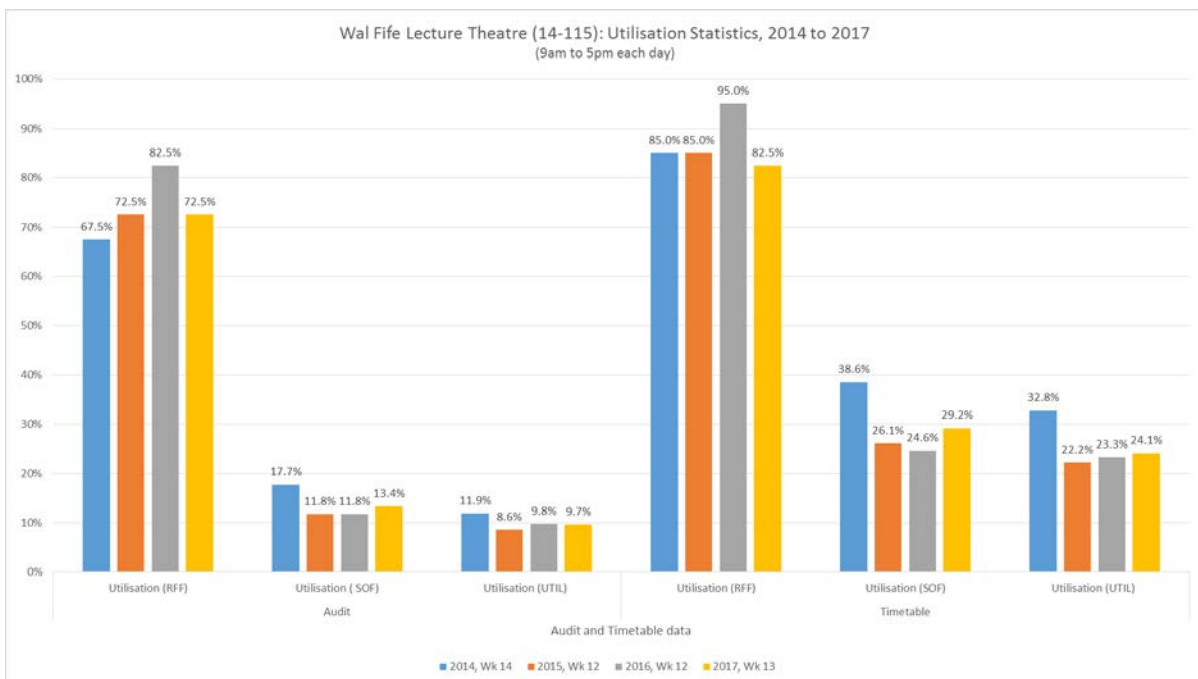
Wal Fife Building (14) Wagga Wagga Campus, S1 2017	Room Frequency Factor (RFF)	Seat Occupancy Factor (SOF)	Utilisation (UTIL)
Audit	47.6%	17.6%	8.4%
Timetable	54.0%	41.5%	22.4%

**Table 3 – Wagga Wagga Campus, Wal Fife Building (14) Session 1 2017: Specific utilisation metrics.**



**Figure 7** - Wagga Wagga Campus, Wal Fife Building (14), Session 1 2017, Utilisation by Audit and Timetable

The review highlights that there is still a large variance between audited and timetabled utilisation as is shown in Figure 7. However the variance in the room frequency factor is not a significant influence. The seat occupancy factor is drastically different, showing an audited percentage of 17.6% to the timetable prediction of 41.5%. (Table 3). Reasons for such a discrepancy have been widely discussed in previous reports however it is evident that the program of infrastructure improvement has not resulted in significant increases in utilisation. The primary Wal Fife Theatre space (Room 115) had a timetabled utilisation of 24.1% (modelled from 9am to 5pm) which has not changed dramatically over time (Figure 8) even with the absorption of activities following the closure of the Swan Theatre.



**Figure 8** - Wagga Wagga Campus, Wal Fife Lecture Theatre (Building 14, Room 115) Historical Utilisation Data by Audit and Timetable (2014-2017).

## 5.0 Computer Laboratories

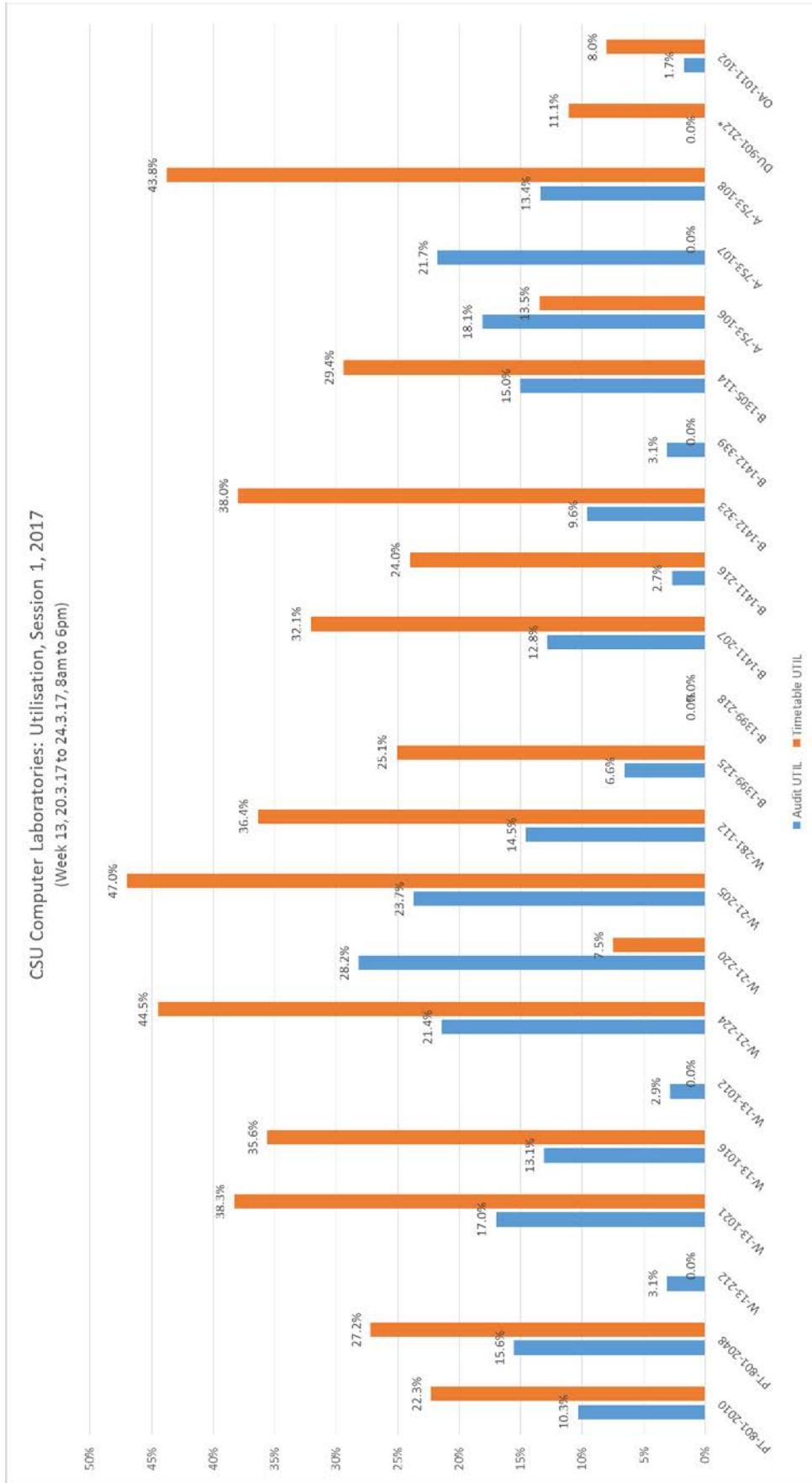
The utilisation of all university computer laboratory spaces was reviewed in the Session 1 2017 audit. The results are graphed in Figure 9 and utilisation metrics are listed in Table 4. These spaces range from specialist School-managed rooms with exclusive booking rights to open access spaces located within Campus Learning Commons. The nature of open access computer laboratories is to provide flexible learning and teaching spaces for student use outside of class times and this is reflected in the greater room frequency percentage of 43.5% compared to the timetabled percentage of 27.5%. Open access spaces also refer to Library Training Rooms that are generally not timetabled but invite student use outside of booked training times (in-house DLS booking system). However the number of students attending computer laboratories is considerably lower than that which was timetabled as shown in the disparity of the seat occupancy factor.

University Computer Laboratories, S1 2017	Room Frequency Factor (RFF)	Seat Occupancy Factor (SOF)	Utilisation (UTIL)
Audit	43.5%	27.1%	11.8%
Timetable	27.5%	71.1%	19.6%

**Table 4** - University Computer Laboratories, Session 1 2017: Specific utilisation metrics

The Dubbo computer laboratory, DU-901-212 does not have audit data due to severe storm damage the week of the review. There are a number of computer laboratories in Figure 9 that suggest significant under-utilisation. As noted, some of these spaces may be exclusively used by a particular School and therefore may not formally timetable activities. Examples of such spaces where timetable bookings were 0% are W-13-1012 (Network Engineering Lab) and B-1399-218 (Psychology Computer Laboratory). The overall under-utilisation of these spaces raises questions regarding ongoing viability and, given advances in information technology, alternate options to facilitate student learning should be explored.

It is recommended that further analysis be undertaken partnering with the Division of Information Technology (DIT) and academic stakeholders to understand the ongoing needs for such spaces. This activity will result in a strategy and action plan for computer laboratories that will consider future course requirements, innovations in information technology, asset utilisation trends, capital replacement cycles and the student experience. The overall objective being to rationalise on underused computer laboratory spaces and to recognise savings in the asset replacement cycle for computer equipment that is not needed.



**Figure 9 - Computer Laboratories Utilisation, Session 1, 2017. Utilisation by Audit and Timetable**

## **6.0 Summary of Recommendations**

### **1. Port Macquarie Campus**

Data will be used to inform stage 2 planning with further analysis required to understand gaps between audit and timetable Room Frequency Factor. This may be related to initial planning numbers not aligning to subject enrolments, classes no longer being held with timetabling not informed or academics choosing to relocate classes away from scheduled spaces – potentially into outdoor informal learning spaces.

### **2. Bathurst Campus Engineering Building**

Further stakeholder discussion and analysis required to understand the real use of the building. Recommend the timetabling additional subject load into the building to leverage upon these premium learning and teaching facilities.

### **3. Wagga Wagga Campus Wal Fife Theatre**

Maintain the strategy of a single large lecture theatre on the Wagga Wagga Campus. Work with timetabling to further drive space booking efficiencies within the building. While bookings for the facilities are high, the student attendance numbers are extremely low. Have the Division of Student Learning provide analysis and commentary on why SOF is continuing to be low.

### **4. Computer Laboratories**

A number of underutilised computer laboratories have been identified in this study. Recommend a joint study with DIT and academic stakeholders to review current and future needs of computer laboratory spaces. The output will be a strategy document mapping a planning pathway to inform capital investment, learning and teaching and timetable needs.

## 7.0 Appendices

### 7.1 Audited Spaces

Room Number	Building	Capacity	Audit RFF	Audit SOF	Audit UTIL	Timetable RFF	Timetable SOF	Timetable UTIL
PT-801-1025	Pitkin House	30	50.0%	42.1%	21.1%	52.0%	57.4%	29.9%
PT-801-1026	Pitkin House	15	30.0%	43.6%	13.1%	46.0%	87.0%	40.0%
PT-801-1027	Pitkin House	15	38.0%	67.7%	25.7%	50.0%	82.7%	41.3%
PT-801-2010	Pitkin House	30	52.0%	19.9%	10.3%	44.0%	50.6%	22.3%
PT-801-2044	Pitkin House	15	50.0%	29.3%	14.7%	44.0%	48.5%	21.3%
PT-801-2045	Pitkin House	15	46.0%	29.9%	13.7%	56.0%	53.6%	30.0%
PT-801-2046	Pitkin House	30	50.0%	39.3%	19.7%	64.0%	68.3%	43.7%
PT-801-2047	Pitkin House	30	50.0%	40.5%	20.3%	66.0%	78.0%	51.5%
PT-801-2048	Pitkin House	70	48.0%	32.4%	15.6%	66.0%	41.2%	27.2%
PT-801-2062	Pitkin House	50	66.0%	38.6%	25.5%	54.0%	67.0%	36.2%
PT-801-2063	Pitkin House	50	58.0%	39.7%	23.0%	58.0%	63.2%	36.7%
PT-801-2064	Pitkin House	30	36.0%	49.8%	17.9%	50.0%	69.9%	34.9%
PT-801-2065	Pitkin House	30	54.0%	34.9%	18.9%	60.0%	65.8%	39.5%
PT-801-3048	Pitkin House	16	14.0%	45.5%	6.4%	38.0%	33.9%	12.9%
PT-801-3049	Pitkin House	8	0.0%	0.0%	0.0%	38.0%	27.6%	10.5%
PT-801-3050	Pitkin House	8	0.0%	0.0%	0.0%	38.0%	39.5%	15.0%
PT-801-3052	Pitkin House	16	50.0%	56.3%	28.1%	88.0%	68.5%	60.3%
PT-801-3057	Pitkin House	4	28.0%	108.9%	30.5%	32.0%	50.0%	16.0%
PT-801-3058	Pitkin House	4	42.0%	67.9%	28.5%	32.0%	50.0%	16.0%
PT-801-3059	Pitkin House	4	24.0%	68.8%	16.5%	32.0%	50.0%	16.0%
PT-801-3060	Pitkin House	4	10.0%	50.0%	5.0%	32.0%	50.0%	16.0%
PT-801-3063	Pitkin House	8	0.0%	0.0%	0.0%	56.0%	57.1%	32.0%
PT-801-3072	Pitkin House	40	30.0%	52.0%	15.6%	34.0%	54.6%	18.6%
PT-3013-108	SHREC	20	4.0%	100.0%	4.0%	8.0%	100.0%	8.0%
PT-3013-112	SHREC	10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PT-3013-120	SHREC	20	8.0%	80.0%	6.4%	8.0%	100.0%	8.0%
PT-3013-G05	SHREC	70	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PT-3013-G06	SHREC	165	20.0%	19.0%	3.8%	20.0%	24.2%	4.8%
PT-3013-G12	SHREC	20	16.0%	76.3%	12.2%	16.0%	100.0%	16.0%
PT-3013-G16	SHREC	24	10.0%	77.5%	7.8%	8.0%	83.3%	6.7%
W-14-115	Wal Fife Theatre	400	62.0%	13.5%	8.3%	72.0%	30.1%	21.7%
W-14-102	Wal Fife Theatre	42	32.0%	38.4%	12.3%	38.0%	68.9%	26.2%
W-14-101	Wal Fife Theatre	42	30.0%	44.1%	13.2%	36.0%	75.7%	27.2%
W-14-209	Wal Fife Theatre	134	58.0%	25.1%	14.6%	58.0%	68.5%	39.7%

Room Number	Building	Capacity	Audit RFF	Audit SOF	Audit UTIL	Timetable RFF	Timetable SOF	Timetable UTIL
W-14-212	Wal Fife Theatre	69	56.0%	13.0%	7.3%	66.0%	46.1%	30.4%
W-13-212	William Merrylees Library	18	28.0%	11.1%	3.1%	0.0%	0.0%	0.0%
W-13-1021	William Merrylees Library	40	58.0%	29.3%	17.0%	56.0%	68.3%	38.3%
W-13-1016	William Merrylees Library	16	66.0%	19.9%	13.1%	38.0%	93.8%	35.6%
W-13-1012	William Merrylees Library	16	28.0%	10.3%	2.9%	0.0%	0.0%	0.0%
W-21-224	CCI Building	20	58.0%	36.9%	21.4%	46.0%	96.7%	44.5%
W-21-220	CCI Building	12	80.0%	35.2%	28.2%	14.0%	53.6%	7.5%
W-21-205	CCI Building	20	66.0%	35.9%	23.7%	50.0%	94.0%	47.0%
W-281-112	Farrer Centre Computer Lab	22	40.0%	36.4%	14.5%	32.0%	113.6%	36.4%
B-1399-125	McDonoghs	24	20.0%	32.9%	6.6%	26.0%	96.5%	25.1%
B-1399-218	McDonoghs	22	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
B-1411-207	Mansfield	26	32.0%	40.1%	12.8%	38.0%	84.4%	32.1%
B-1411-216	Mansfield	14	10.0%	27.1%	2.7%	24.0%	100.0%	24.0%
B-1412-323	Truskett Library	30	38.0%	25.3%	9.6%	40.0%	95.0%	38.0%
B-1412-339	Truskett Library	11	20.0%	15.5%	3.1%	0.0%	0.0%	0.0%
B-1305-105	Engineering	10	16.0%	17.5%	2.8%	0.0%	0.0%	0.0%
B-1305-108	Engineering	30	32.0%	38.3%	12.3%	36.0%	48.9%	17.6%
B-1305-109	Engineering	30	26.0%	7.9%	2.1%	36.0%	48.9%	17.6%
B-1305-110	Engineering	30	0.0%	0.0%	0.0%	48.0%	63.3%	30.4%
B-1305-111	Engineering	30	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
B-1305-114	Engineering	31	82.0%	18.3%	15.0%	48.0%	61.3%	29.4%
B-1305-136	Engineering	100	92.0%	9.9%	9.1%	12.0%	30.0%	3.6%
A-753-106	Nowik Learning Commons	16	74.0%	24.5%	18.1%	14.0%	96.4%	13.5%
A-753-107	Nowik Learning Commons	15	82.0%	26.5%	21.7%	0.0%	0.0%	0.0%
A-753-108	Nowik Learning Commons	20	72.0%	18.6%	13.4%	46.0%	95.2%	43.8%
DU-901-212	Interactive Learning Centre	18	0.0%	0.0%	0.0%	12.0%	92.6%	11.1%
OA-1011-102	Communications	30	4.0%	43.3%	1.7%	12.0%	66.7%	8.0%
<b>TOTAL</b>		<b>2189</b>	<b>35.2%</b>	<b>24.6%</b>	<b>8.7%</b>	<b>34.2%</b>	<b>52.8%</b>	<b>18.1%</b>