

DIVISION OF FACILITIES MANAGEMENT  
Planning, Design and Construction

# CSU Residential School Learning & Teaching Space 2017 Utilisation Report Wagga Wagga Campus

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## 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 20 spaces located within the Boorooma Precinct of the Wagga Wagga Campus for the duration of the 2017 Session 1 Residential School period (02/04/17 to 13/04/17). Following a similar review in 2016, the key driver for this report was to provide an analytical response to the enduring opinion that the campus' stock of learning and teaching spaces are effectively at capacity for Residential Schools. 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.

Key findings of this report show:

- The view that the campus is effectively at capacity for residential schools is incorrect.
- There are financial implications relating to the operation of unused or underused spaces covering cleaning, heating / cooling and security.
- Analysis of the Boorooma Precinct of the Wagga Wagga Campus indicated there is ample learning and teaching space for current Residential School needs and for any anticipated future growth. Based on audit returns, learning and teaching utilisation was measured at 4.1% with a timetable utilisation of 22.1%.
- Significant variance in room frequency when compared with sessional teaching data was again observed which indicated a large proportion of booked spaces are simply not used.
- Current timetabling processes are seen as a key contributor to poor utilisation whereby a number of subject bookings significantly exceeded requirements in terms of the ratio of students to space.

This report recommends numerous courses of action (Section 6.0 - Recommendations) with the most critical being a review of timetabling principles and practices focusing on challenging unrealistic booking requests which impact the wider availability of quality space across the precinct.

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## 1.0 Introduction

The purpose of this report is to provide an assessment of the utilisation of learning and teaching spaces in the Wagga Wagga Campus of Charles Sturt University (CSU) for the 2017 Session 1 Residential School. This Residential School period took place between April 2<sup>nd</sup> and April 13<sup>th</sup>, 2017. Learning and teaching spaces are a key element to the fabric of CSU's campuses. The Division of Facilities Management (DFM) has, this year, chosen to audit a subset of twenty spaces combined with a full review of timetable and subject data.

Residential Schools provide CSU students studying online the opportunity to attend campus for face-to-face lectures, tutorials and laboratory classes which, in many cases, is the only physical interface a student has to the organisation. 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 20 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 the 2017 Session 1 Residential School on the Wagga Wagga Campus.

A number of report recommendations for the closure of learning and teaching spaces on the Wagga Wagga Campus have been challenged by stakeholders based on apparent need for space during Residential Schools. Examples being spaces within the Lecture Unit (Building 11) and the Keith Swan Theatre (Building 12, Room 103). Whilst closed for the 2016 and 2017 sessional teaching year, these spaces have been reactivated during Residential School periods based on sustained pressure from faculties and advice from Timetabling. It is the intent of this document to challenge the need to reactivate these mothballed spaces, along with providing detailed analysis of the usage patterns of learning and teaching spaces at both room and subject levels. Data analysis and reporting was undertaken by the DFM who wish to acknowledge the Division of Student Administration (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 Residential School at the Wagga Wagga Campus (02/04/17 to 13/04/17). A decision was made to audit a subset of 20 timetabled spaces on the Boorooma Precinct of the campus to clarify the utilisation compared to the earlier Session 2 Residential school report of 2016. The full listing of the spaces audited and the individual utilisation metrics is included in Section 7.0 (Appendix). Analysis of timetable and subject data for the entire campus has also been undertaken (Section 4.0) . All other CSU campuses and sites have been excluded from this report.

## 1.2 Governance

This document provides a view of timetable effectiveness across the Wagga Wagga Campus' 2017 Session 1 Residential School. The following organisational stakeholders have been identified:

- Division of Facilities Management (DFM)
- Division of Student Administration (DSA)
- 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 four organisational committees within CSU:

1. Residential Schools Steering Committee
2. Timetable Governance Committee
3. Capital Planning Committee
4. Learning Environments Committee

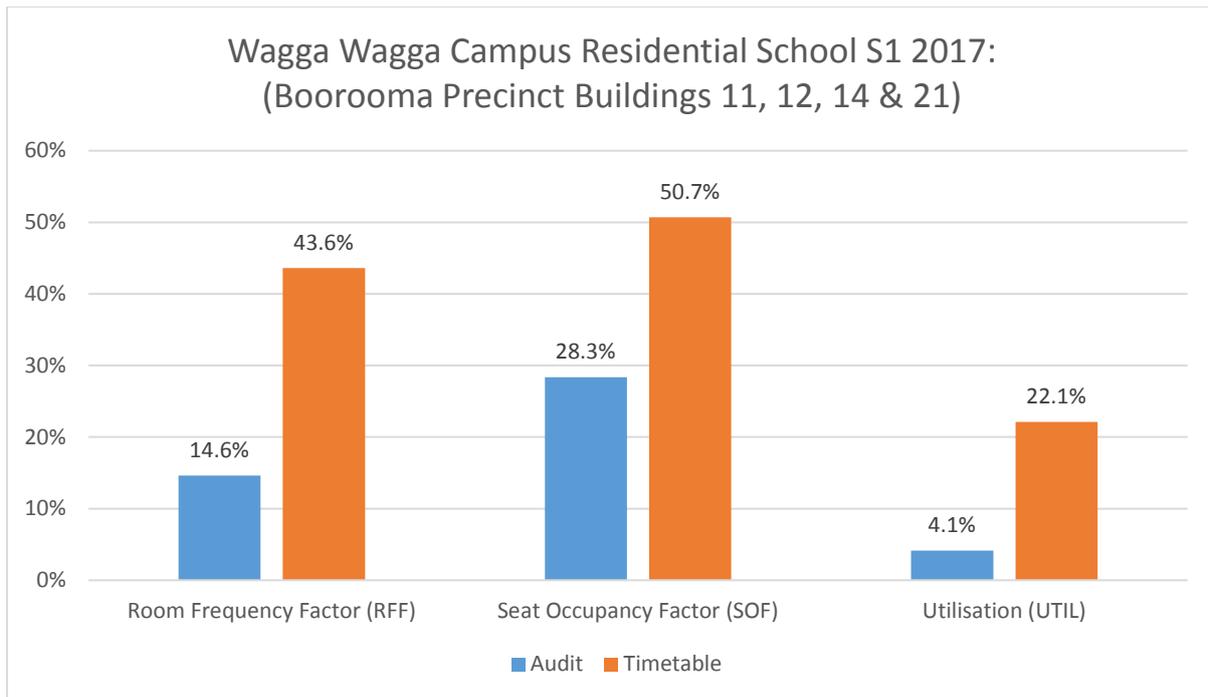
Data within this document provides insight into a missing element of learning and teaching space use metrics within CSU - the use of space for residential schools. Findings within this document will provide significant benefit to ongoing planning of space and further insight into forward strategy decisions relating to CSU's approach to timetabling and ultimately, the experience of our online student cohort.

## 2.0 Wagga Wagga Campus Aggregate Data

Results represented in this section relate to two main data sources. Firstly, timetable data and secondly, audit data. As the physical audit constituted only twenty spaces within four buildings, comparative timetable analysis is limited however due to their location and use, these spaces are of particular interest. Aggregated data in Figure 1 outlines audit and timetable frequency, occupancy and utilisation statistics specific to targeted spaces from within the Boorooma Precinct on the Wagga Wagga Campus. These building are:

- Building 11 - Lecture Unit
- Building 12 - Keith Swan Theatre
- Building 14 - Wal Fife Theatre
- Building 21 - Communications and Creative Industries

Figure 1 clearly identifies audited spaces are underutilised and show a significant deviation from the timetable data. Detailed audit data for specific rooms within the above buildings is located in Section 7.0 (Appendix).

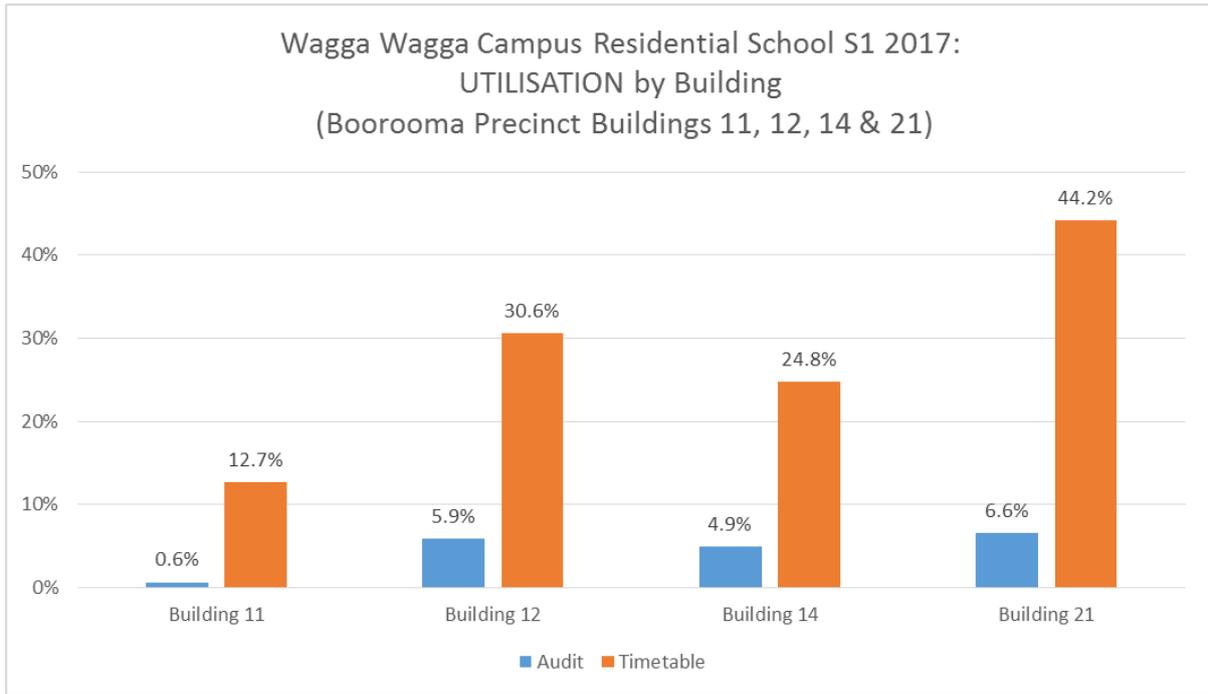


**Figure 1** - Wagga Wagga Campus audit and timetable frequency, occupancy and utilisation, 2017 Session 1 Residential School specific to targeted spaces within buildings 11, 12, 14 & 21.

In order to better understand timetabling data accuracy, the Wagga Wagga Campus Session 1, 2017 Residential School Learning and Teaching Space Utilisation Review (OLaTSUR) was completed in Weeks 15 and 16 (April 2nd to April 13th, 2017). Of interest are three factors:

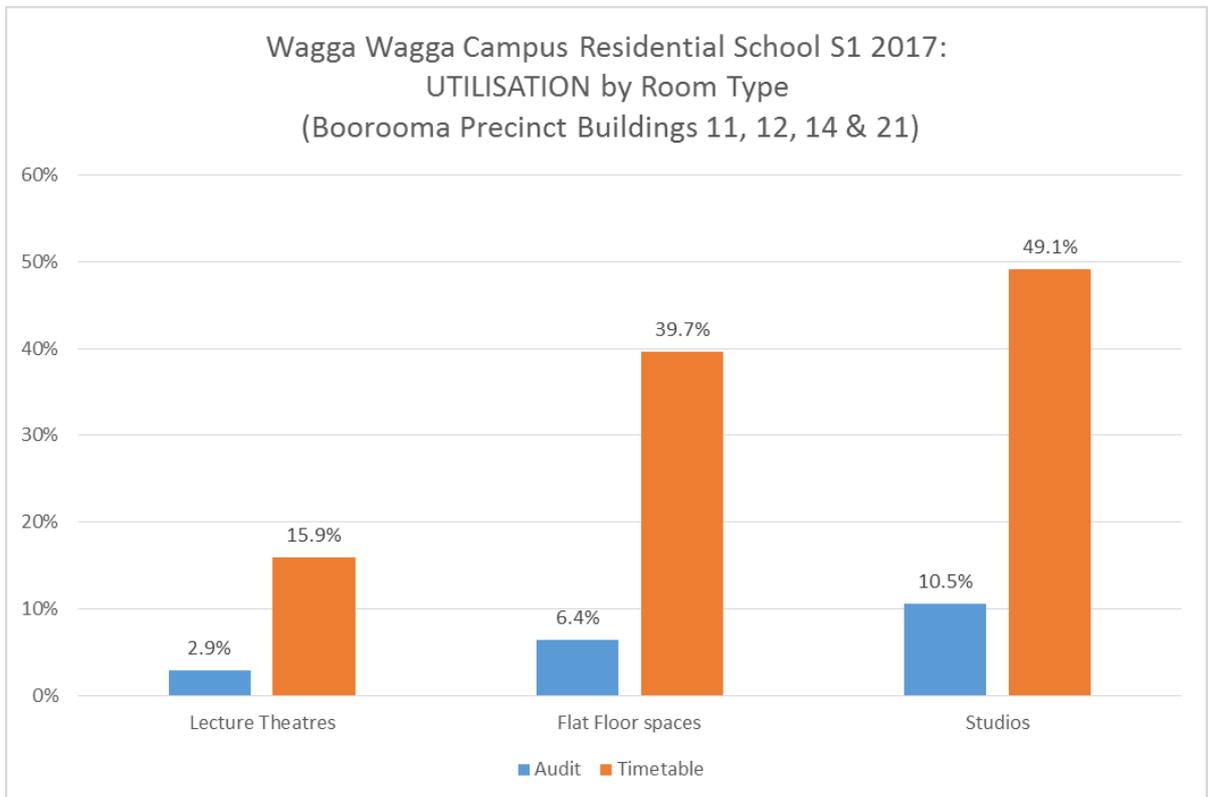
- Low overall utilisation measures when timetable is compared to audit (Figures 1 & 2). This has been a consistent outcome over previous years of data analysis. This indicates a real world utilisation being significantly less than officially reported timetable figures, ie: 4.1% (Audit) compared to 22.1% (Timetable).
- Comparative analysis between audit and timetable data indicates variations in Room Frequency Factor measures. The disparity is considerably greater than during sessional teaching weeks as compared to past years of reporting.
- 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.

Analysis of utilisation data over weeks 15 and 16 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 1 & 2). This is interpreted as an overbooking of timetable booked classes. Seat occupancy (SOF) metrics indicate a significant gap between what was anticipated in the timetable and what the auditors accounted for (Figures 1 & 2). There are numerous dynamics influencing these results and within this area alone there is significant body of academic literature discussing potential factors.



**Figure 2 - Wagga Wagga Campus, Boorooma Precinct, Buildings 11, 12, 14 and 21 Audit and Timetable Utilisation**

### 3.0 Utilisation by Room Type



**Figure 3 - Wagga Wagga Campus, Boorooma Precinct, Buildings 11, 12, 14 and 21 Audit and Timetable Utilisation by Room Type**

Analysis of audit and timetabling for the three room types selected in the review all show a marked contrast between the timetable and audit results (Figure 3). This is primarily due to the 'blanket booking' of spaces that are not fully utilised.

### 3.1 Case Study: Wal Fife and Keith Swan Theatres

The need to examine specific cases brings into question the processes and efficiencies that are perceived rather than what is actually happening with facilities. The use of the two largest lecture theatres on the Wagga Wagga Campus provides insights into these issues.

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 this building the premier facility for learning and teaching on campus. The Keith Swan Lecture Theatre (Building 12, Room 103), with a capacity of 269 was taken off the timetable as of the commencement of session 2 of the 2015 teaching year. The space was placed into 'moth-balled' status due to sessional teaching utilisation data indicating that it was simply not needed. The overall condition of the theatre was also a contributing factor in the decision to take the space offline. It therefore has had minimal maintenance and is currently in an inferior state to that of other lecture theatres on the Wagga Wagga Campus.

The Residential Schools in Session 2, 2016 and Session 1, 2017 saw the Keith Swan Lecture Theatre reopened to accommodate an apparent high demand for teaching space. Analysis of timetable data indicated this to be an appropriate course of action based on the high levels of bookings. It was understood, based on timetable booking data, all lecture spaces would be heavily utilised for the duration of the Residential School period. Audit analysis of the actual use outlined a different scenario (Table 1).

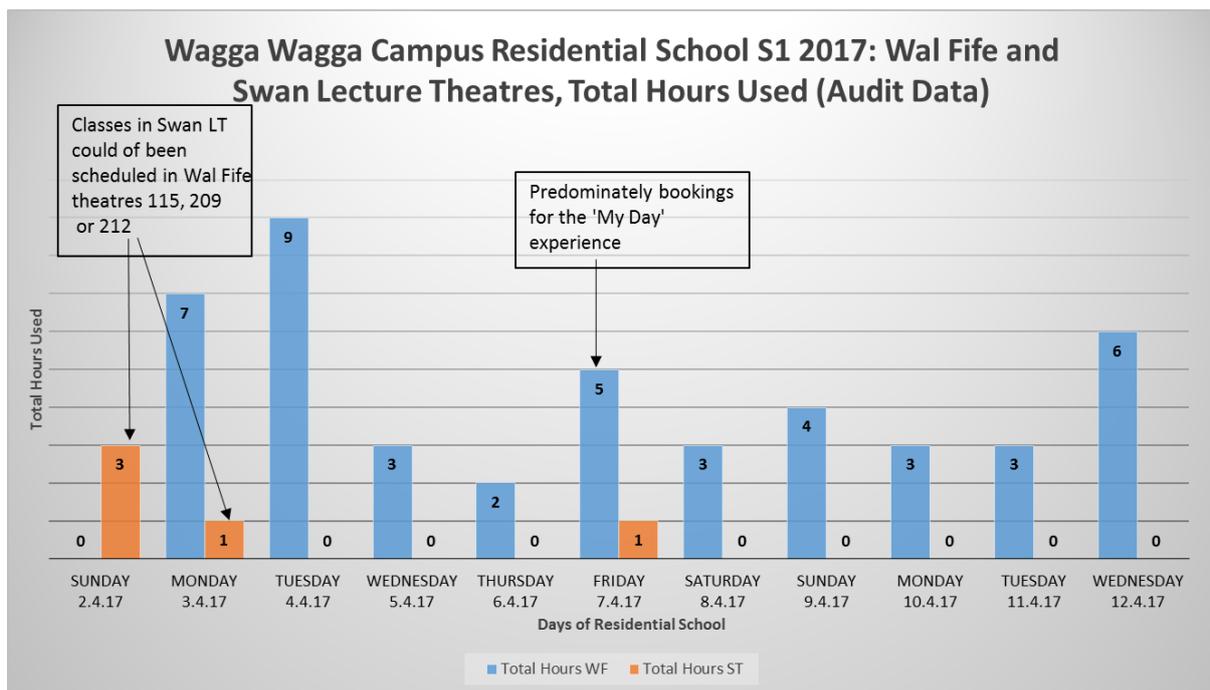
<b>Audit Results 2016</b>	<b>Room Frequency Factor (RFF)</b>	<b>Seat Occupancy Factor (SOF)</b>	<b>Utilisation (UTIL)</b>
Wal Fife Lecture Theatre (14- 115)	17.1%	15.2%	2.7%
Keith Swan Lecture Theatre (12-103)	53.1%	29.8%	15.8%

<b>Audit Results 2017</b>	<b>Room Frequency Factor (RFF)</b>	<b>Seat Occupancy Factor (SOF)</b>	<b>Utilisation (UTIL)</b>
Wal Fife Lecture Theatre (14- 115)	40.9%	22.6%	9.2%
Keith Swan Lecture Theatre (12-103)	4.5%	31.9%	1.4%

**Table 1** - Wagga Wagga Campus 2016 Session 2 and Session 1 2017 Residential School: Specific utilisation metrics for the Wal Fife Lecture Theatre (W-14-115) and Keith Swan Lecture Theatre (W-12-103).

The greater reliance on the Wal Fife theatre in 2017 is pleasing, with the Keith Swan Lecture Theatre being used sparingly, (the opposite was the case in 2016). The Wal Fife Theatre, was relatively solidly booked and had an overall utilisation of 9.2% in 2017, up from 2.7% in 2016. The Keith Swan Lecture Theatre reported a reduced utilisation of 1.5% in 2017, down from 15.8% in 2016 (Table 2).

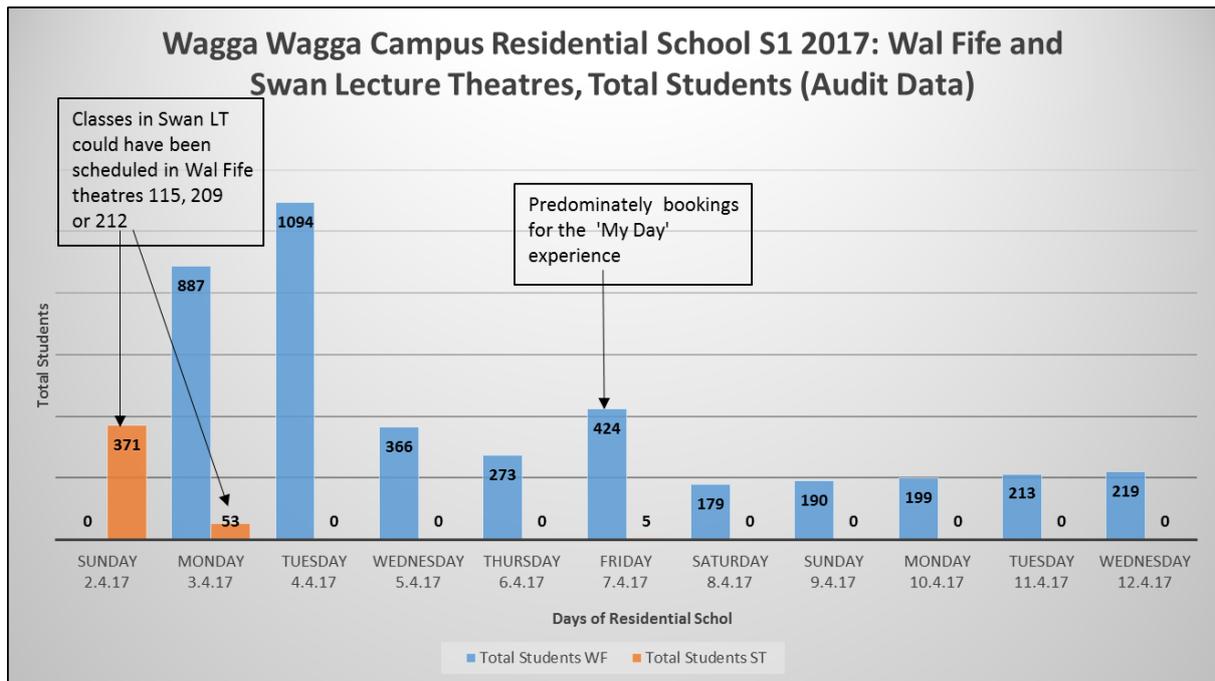
However there was no valid reason to book or use the Keith Swan Lecture Theatre. The use of the Theatre could easily have been accommodated in the Wal Fife Lecture theatres. There was 'no clash' in the timetable that could not have been accommodated elsewhere. This is highlighted in the following two graphs.



**Figure 4 -** Wagga Wagga Campus 2017 Session 1 Residential School: Wal Fife Lecture Theatre (W-14-115) and Keith Swan Lecture Theatres (W-12-103). Comparative analysis of audited hours of actual use.

Figure 4 provides detail relating to the actual hours used for both Wal Fife and Keith Swan theatres. Figure 5 provides total numbers of students counted in both spaces during the audit process. Evidence indicates the approach of 'blanket' booking is creating the apparent issues in capacity for Residential Schools. Blanket bookings has a ripple effect which in-turn forces Timetabling to move classes into less suitable spaces or spaces that have been closed to sessional teaching such as the Keith Swan Lecture theatre (Building 12).

The student experience is adversely affected and has a reputational effect upon the organisation. Key to large lecture theatre spaces is that spaces with high functionality, quality, configuration to utilise a range of teaching pedagogies will both enhance the learning experience of visiting online students and add reputational value to the organisation. The Keith Swan Theatre offers none of the above factors and is not required for learning and teaching and should be closed.



**Figure 5 - Wagga Wagga Campus 2017 Session 1 Residential School: Wal Fife Lecture Theatre (W-14-115) and Keith Swan Lecture Theatres (W-12-103). Comparative analysis of audited total student attendance.**

#### 4.0 Subject Analysis

Analysis of subject data using data from the University timetable, Banner, the University Handbook and audit returns indicates a number of anomalies in the correlation of assumed learning and teaching space need versus actual bookings. Table 2 highlights examples of excessive booking of space based on assumed space requirements for student numbers over the duration of the subject's residential school class booking. This is indicative of blanket booking whereby spaces are booked for whole days or the duration of the subject residential school class booking with audit results indicating that a large percentage of scheduled time is not used by classes.

Potential drivers for this form of booking include process - historically larger student cohorts and a rollover of the previous year's bookings or, pedagogy - more flexible, fluid teaching requirements meaning a greater need for space to undertake breakout activities. Further consultation with subject coordinators is required to understand in more detail the rationale behind high hours of bookings but it is clear that the numbers reported are excessive. Ultimately overbooked space can be reallocated to other subjects or not allocated resulting in savings in operational costs.

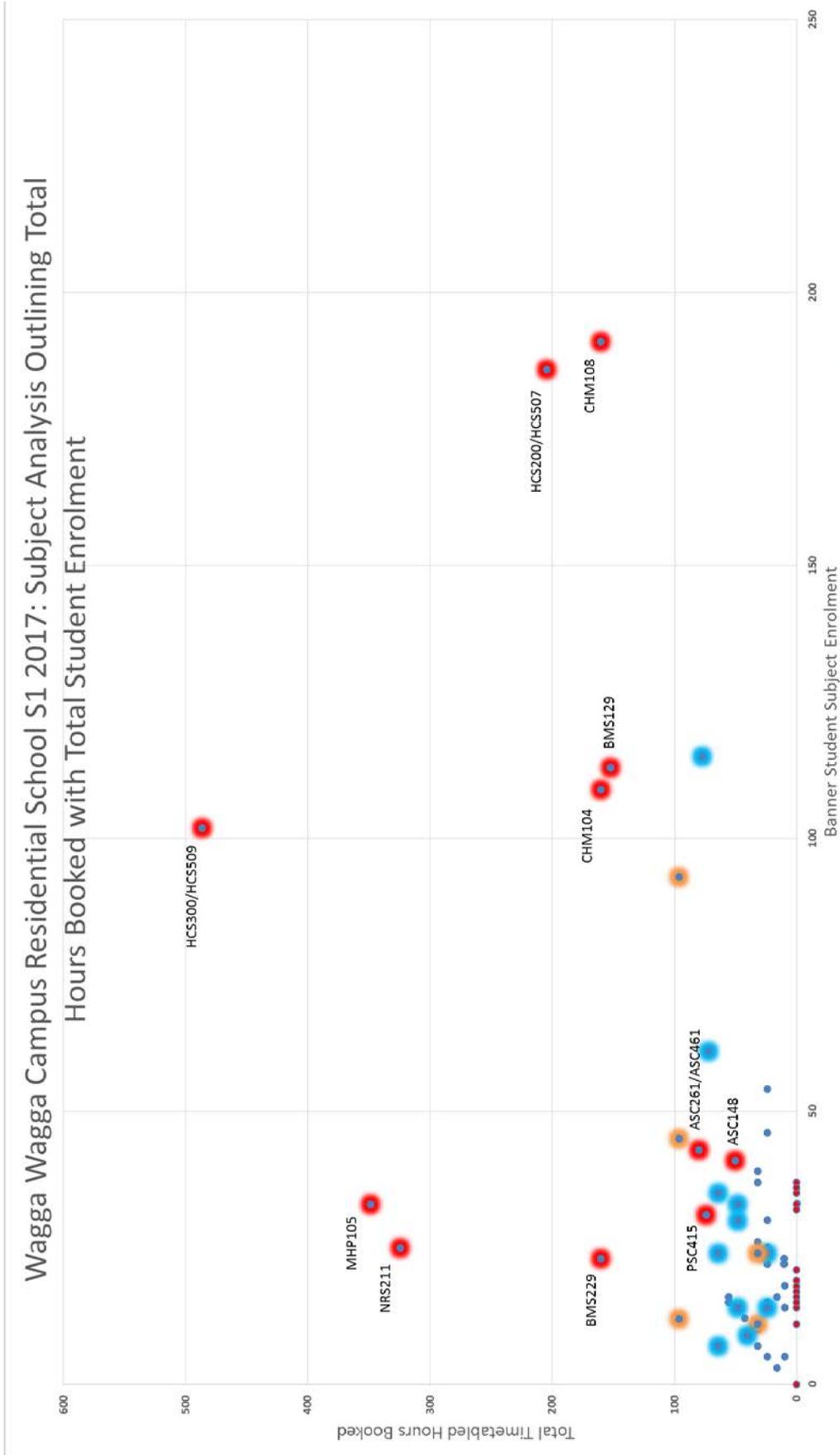
Wagga Wagga Campus 2017 Session 1 Residential School: Analysis of Subjects						
Subject	School	Faculty	Banner Enrolment	Residential School Days	Total Hours Booked	Estimated Overbooking Ratio
HCS300/HCS509	SHSS	FOAE	102	4	486	15
NRS211	SNMIH	FOS	25	4	324	10
MHP105	SNMIH	FOS	33	5	348.5	9
BMS229	SBS	FOS	23	3	160	7
CHM108	SAWS	FOS	191	3	160	7
CHM104	SAWS	FOS	109	3	160	7
HCS200/HCS507	SHSS	FOAE	186	4	204.5	6
BMS129	SBS	FOS	113	3	152	6
ASC148	SAVS	FOS	41	1	50	6
ASC261/ASC461	SAVS	FOS	43	2	80	5
PSC415	SAWS	FOS	31	2	74	5
ASC106	SAVS	FOS	24	1	32	4
BMS308	SBS	FOS	45	3	96	4
ITC355	SOMP	FOBJS	11	1	32	4
PSC102	SAWS	FOS	93	3	96	4
PSC202	SAWS	FOS	12	3	96	4

**Table 2 -** Wagga Wagga Campus 2017 Session 1 Residential School: Analysis of subjects with an estimated overbooking ratio of 4x times what would be expected based on total booked hours

Figure 6 displays all subjects with residential school bookings based on student subject enrolment and timetable booking data. A clear cluster of subjects appears with cohorts under fifty students and bookings of one hundred hours or less. Based on timetable data, the average duration of a residential school during this period was 2.77 days.

Graph Element	Element Explanation
Blue Dot / Red Halo	Bookings in excess of 5x estimated space requirements
Blue Dot / Orange Halo	Bookings in excess of 4x estimated space requirements
Blue Dot / Blue Halo	Bookings in excess of 3x estimated space requirements
Blue Dot / No Halo	Bookings falling within expected (1-2x) space requirements
Black Dot / No Halo	Bookings for subjects with no Residential School
Red Dot / No Halo	Subjects with Banner enrolments exist and residential schools listed in the handbook but no bookings within the timetable.

**Table 3 -** Wagga Wagga Campus 2016 Session 2 Residential School: Breakdown of Figure 25 graphing elements.



**Figure 6 -** Wagga Wagga Campus 2017 Session 1 Residential School: Subject Analysis Outlining Total Hours Booked with Total Student Enrolment

Table 3 provides detailed explanation regarding the separation of graphed elements in Figure 6 aligning with subject data highlighted in Table 2. Anomalous subject space bookings are clearly identifiable when compared to the collective dataset. Sixty one percent of subjects fell within expected space requirements of one to two times booking ratio. Booking ratio was calculated on total timetabled hours booked per subject reconciled with an expected maximum eight hours of teaching. It is expected that some subjects may have booking ratios greater than one based on potential requirements for laboratory and teaching spaces or breakout group teaching. With this said, any subjects with a ratio greater than two have been highlighted. Furthermore there were a number of booking anomalies whereby subjects flagged as a scheduled residential schools did not correlate with a corresponding timetable entry (Figure 6).

Ongoing analysis of subject level booking data is recommended to clearly define the actual requirement for spaces to align with pedagogy outcomes. Current auditing processes do not provide detail relating to use of space outside of subject bookings. That is, we cannot reliably reconcile actual subject hours taught if lessons were conducted in spaces other than those booked or were undertaken without bookings.

Based on the above, there is a significant argument that high levels of blanket booking of space exist. There is also additional evidence that a number of subjects are not booked within the timetable, possibly booked at a faculty level using faculty facilities. Reasons for this may include exclusivity of space or some schools choosing not to use the timetable to book space.

The concept of the campus being full during residential schools is based more on perceptions derived from bookings. In actuality, there is plentiful space for the teaching of residential school subjects on campus. The processes behind subject space bookings require a full review to identify why situations of over-booking and under-booking exists.

## **5.0 Key Observations**

1. Reasons for over-booking are:
  - a. Blanket booking of rooms. This is a reoccurring issue.
  - b. Rollover of timetable bookings based on historically large student cohorts.
  - c. Multiple rooms booked to be used simultaneously, often as blanket bookings.
  - d. Erroneous bookings in the Timetable with no room attached.
2. Some extreme examples of overbooking of spaces exists such as:
  - a. HCS300/CS509 with an enrolment of 102 students which was booked for 486 hours of teaching over 4 days.
  - b. NRS211 with an enrolment of 25 students which was booked for 324 hours of teaching over 4 days.
  - c. MHP105 with an enrolment of 33 students which was booked for 348.5 hours of teaching over 5 days.

3. Lecture Theatres within the Boorooma Precinct were not used effectively with the Keith Swan Lecture Theatre being reopened. Data clearly indicates the reopening of the Keith Swan Theatre was not required. Clashes in observed use could have been resolved by scheduling use in other facilities within the Wal Fife Theatre complex.
4. The processes facilitating the scheduling of Residential schools appears to be deregulated with minimal 'common' procedures across Faculties and Schools and possibly (although not proven) Campuses. Additionally, the process by which timetabling are informed of residential school needs appears to be different between Faculties and Schools.
5. Data within this report is drawn from the Wagga Wagga Campus Session 1 Residential School. It has verified that the symptomatic issues highlighted in the 'CSU Residential School Learning and Teaching Space 2016 Utilisation Report, Wagga Wagga Campus' document are duplicated across the Residential School sessions 1 and 2.

## **6.0 Recommendations**

This report identifies a number of principles and recommendations for physical learning and teaching spaces across the university. These recommendations have been taken from the 2016 report as 2017 analysis has identified the same issues:

### **1. Report Driver**

The study of the Session 1 Residential School on the Wagga Wagga Campus was initiated primarily due to feedback from Timetabling and academic stakeholders indicating the campus was effectively full in terms of available learning and teaching space. Analysis has indicated that there is plentiful space on the Boorooma Precinct of the Wagga Wagga Campus to accommodate existing load and any future growth.

### **2. Process Reengineering**

Feedback from Timetabling (DSA) indicates their role is to fundamentally book spaces based on the requirements set down by Schools and Faculties. It is clear that the data provided by these groups, in many cases is incorrect. Additionally, the methodology currently used by Timetabling to schedule each residential school is not conducive to developing an efficient timetable. These factors lead to issues highlighted within this report such as blanket booking, over booking, squatting and classes being conducted in spaces that are not overly favourable to supporting the student experience. It is recommended a full review of the residential school policy and associated process is undertaken considering facility use efficiencies, the needs of academics and students, along with identifying owners of the end-to-end process of scheduling. Additionally, subject analysis at a pedagogical level is recommended to understand real space needs based on proposed teaching patterns / plans. There is a great potential for Timetabling to adopt the role of business partner working with academic stakeholders to drive an effective and efficient process.

### **3. Lecture Theatres**

Permanently remove the Keith Swan Theatre from the University timetable (Sessional and Residential School) and mothball the facility. In collaboration with campus stakeholders, the space will be reviewed to establish its longer term future.

### **4. Financial Implications**

The costs of underutilised assets have far reaching implications which can be summarised as:

- a. Operational costs that are expended inefficiently across facilities that should be more highly utilised and rationalised.
- b. Capital costs that are maintaining/renovating an asset portfolio, where older or seriously underutilised stock could be moth-balled, decommissioned or demolished.
- c. Amortisation costs that are accruing on Assets that should be 'off the books'.
- d. Opportunity costs associated with funds expended in operating and capital costs that could be channelled into other university priorities.
- e. Reputational costs associated with poor utilisation that continues to affect staff and students by not prioritising classes in the best facilities for the best student experience and outcomes.

### **5. Ongoing Audits**

As with the 2016 Report findings, DFM does not intend to conduct future audits of Residential Schools until the University demonstrates changes to timetabling principles and practices.

## 7.0 Wagga Wagga 2017 Session 1 Residential School: Appendices

### 7.1 Audited Spaces

Room Number	Building	Capacity	Audit RFF	Audit SOF	Audit UTIL	Timetable RFF	Timetable SOF	Timetable UTIL
W-11-109	Lecture Unit	61	17.3%	7.7%	1.3%	45.5%	45.6%	20.7%
W-11-208	Lecture Unit	91	1.8%	25.8%	0.5%	32.7%	26.8%	8.8%
W-11-203	Lecture Unit	79	0.0%	0.0%	0.0%	50.9%	20.3%	10.3%
W-14-115	Wal Fife Theatre	398	40.9%	22.6%	9.2%	73.6%	33.4%	24.6%
W-14-102	Wal Fife Theatre	42	13.6%	30.5%	4.2%	52.7%	85.2%	44.9%
W-14-101	Wal Fife Theatre	42	12.7%	48.1%	6.1%	60.0%	86.1%	51.7%
W-14-209	Wal Fife Theatre	134	16.4%	34.9%	5.7%	59.1%	56.2%	33.2%
W-14-212	Wal Fife Theatre	69	12.7%	42.3%	5.4%	42.7%	33.8%	14.4%
W-12-103	Keith Swan Theatre	269	4.5%	31.9%	1.4%	0.0%	0.0%	0.0%
W-12-120	Keith Swan Theatre	25	35.5%	53.8%	19.1%	43.6%	83.0%	36.2%
W-12-121	Keith Swan Theatre	30	7.3%	80.0%	5.8%	16.4%	100.0%	16.4%
W-12-122	Keith Swan Theatre	30	22.7%	57.6%	13.1%	29.1%	80.0%	23.3%
W-12-134	Keith Swan Theatre	20	4.5%	45.0%	2.0%	41.8%	100.0%	41.8%
W-12-136	Keith Swan Theatre	30	8.2%	30.7%	2.5%	38.2%	100.0%	38.2%
W-12-139	Keith Swan Theatre	30	9.1%	26.7%	2.4%	64.5%	91.5%	59.1%
W-21-224	CCI Building	20	20.0%	31.8%	6.4%	49.1%	100.0%	49.1%
W-21-217	CCI Building	25	29.1%	33.0%	9.6%	49.1%	100.0%	49.1%
W-21-206	CCI Building	11	24.5%	85.5%	21.0%	49.1%	100.0%	49.1%
W-21-201	CCI Building	80	1.8%	8.1%	0.1%	24.5%	100.0%	24.5%
W-21-278	CCI Building	25	10.0%	30.9%	3.1%	49.1%	100.0%	49.1%
TOTAL		1511	14.6%	28.3%	4.1%	43.6%	50.7%	22.1%

## 7.2 Audited Spaces Utilisation Metrics by Building

<b>Building 11</b>	<b>Room Frequency Factor (RFF)</b>	<b>Seat Occupancy Factor (SOF)</b>	<b>Utilisation (UTIL)</b>
Audit	6.4%	10.1%	0.6%
Timetable	43.0%	29.4%	12.7%
Variance	-36.7%	-19.3%	-12.0%

<b>Building 12</b>	<b>Room Frequency Factor (RFF)</b>	<b>Seat Occupancy Factor (SOF)</b>	<b>Utilisation (UTIL)</b>
Audit	13.1%	44.9%	5.9%
Timetable	33.4%	91.8%	30.6%
Variance	-20.3%	-46.9%	-24.7%

<b>Building 14</b>	<b>Room Frequency Factor (RFF)</b>	<b>Seat Occupancy Factor (SOF)</b>	<b>Utilisation (UTIL)</b>
Audit	19.3%	25.6%	4.9%
Timetable	57.6%	43.0%	24.8%
Variance	-38.4%	-17.3%	-19.8%

<b>Building 21</b>	<b>Room Frequency Factor (RFF)</b>	<b>Seat Occupancy Factor (SOF)</b>	<b>Utilisation (UTIL)</b>
Audit	17.1%	38.3%	6.6%
Timetable	44.2%	100.0%	44.2%
Variance	-27.1%	-61.7%	-37.6%

### 7.3 Audited Spaces Utilisation Metrics by Room Type

Lecture Theatres	Room Frequency Factor (RFF)	Seat Occupancy Factor (SOF)	Utilisation (UTIL)
Audit	11.9%	24.3%	2.9%
Timetable	41.1%	38.7%	15.9%
Variance	-29.2%	-14.4%	-13.0%

Flat Floor Spaces	Room Frequency Factor (RFF)	Seat Occupancy Factor (SOF)	Utilisation (UTIL)
Audit	13.7%	46.4%	6.4%
Timetable	43.9%	90.3%	39.7%
Variance	-30.2%	-43.8%	-33.3%

Studios	Room Frequency Factor (RFF)	Seat Occupancy Factor (SOF)	Utilisation (UTIL)
Audit	24.5%	42.8%	10.5%
Timetable	49.1%	100.0%	49.1%
Variance	-24.5%	-57.2%	-38.6%