

Wireless Access Extension Project - Executive Summary

As a result of feedback reporting bandwidth issues and Wi-Fi blind spots from the opening of the new buildings (which contain high amounts of steel), increased use of technology and increased student / staff numbers we undertook an internal Wi-Fi access survey. The results showed that we needed 10 access points in the Bancroft Building and 4 in the Chapman building – more than anticipated during design. In order to medium term proof the rest of the campus, we would like to propose ordering another 16 access points.

All new access points will be Wi-Fi 6, which has the latest security standards and designed for high density areas. Older points would be redeployed to lower usage areas.

Our original Asset Management plan only originally budgeted for £2,000 of expenditure for a wireless controller, however this survey highlights a greater need and introduces a cloud-based controller that does not require onsite hardware costs.

A cost comparison exercise was undertaken with the following results:

Company	Solution	Unit type	Unit Cost	Number proposed	Total	License (Years)	License per unit	License Cost	Configuration	Carriage	Extras	Total	Yearly overhead charge	Cost per unit per license year
SwitchShop	Aruba	AP-515	£ 297.44	8	£ 2,379.52	5	£ 134.30	£ 1,074.40	£ 1,990.00	£ 12.50	£ 78.27	£ 5,534.69	£ 1,106.94	£ 138.37
Redway Networks	Meraki	MR36	£ 252.00	14	£ 3,528.00	10	£ 163.00	£ 2,282.00	£ 650.00	£ -	£ 100.00	£ 6,560.00	£ 656.00	£ 46.86
net-ctrl	Ruckus	R550	£ 313.41	8	£ 2,507.28	3	£ 30.77	£ 246.16	£ 495.00	£ 30.00	£ -	£ 3,278.44	£ 1,092.81	£ 136.60
Redway Networks	Cambium	XV2	£ 251.00	8	£ 2,008.00	5	£ -	£ -	£ 800.00	£ -	£ -	£ 2,808.00	£ 561.60	£ 70.20
Redway Networks	Cambium	XV3	£ 459.00	8	£ 3,672.00	5	£ -	£ -	£ 800.00	£ -	£ -	£ 4,472.00	£ 894.40	£ 111.80
JungleIT	Meraki	MR36	£ 370.60	14	£ 5,188.40	10	£ 600.65	£ 8,409.10	£ -	£ 8.95	£ -	£ 13,606.45	£ 1,360.65	£ 97.19

The most cost-effective provider is Redway networks Meraki solution, which we recommend. 30 units would equate to a cost of £13,200.

Governors should be aware that as at the 1st February, prices were expected to increase 5-10% from all providers. We have a provisional order held for 30 units at the previous price.

This request changes the Asset Management plan profile as follows:

Category	Replacement cost	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Projectors (Anstee building) to Smart TV's	3700	0	0	14			
Projectors Room V13 to Smart TV's	3700	0	0	1			
Projectors (various installed 2016) to Smart	3700				6	8	
Student computers	600	47	66	35	33	0	46
Staff computers	500	20	10	10	10	15	0
Uninterruptible Power Supply	10000				1		
Wireless access points	440	30					
Projected cost		51400	44600	81500	57000	37100	27600
	Budget	39600	20000	20000	TBC	TBC	TBC
	Reserves	11800	24600	61500	TBC	TBC	TBC

We therefore request Governors' approval to utilise c. £12,000 of reserves for this project.

Areas for focus (report from Tony Cable)

My first area where I would propose replacing is the Anstee languages building – we currently have 6 APs in the ceiling, which I would replace with this new solution. I would also work with the company that we implement this with to do some predictive maps whilst we are waiting for the hardware to arrive to ensure that we are getting the maximum wireless signal from the system in the classrooms and offices.

The signal will be no worse than at current replacing the old access points in the same locations at the new access points, but the recommendation is to put them into rooms so the best signal is in the classrooms, rather than in the corridor.

I would then recommend replacing the wireless in the sixth form study areas. A number of students are struggling to log onto the wireless on their laptops or phone due to new security measures within windows; whilst this is a small number at the moment, as more students update their devices, this will become a bigger issues.

These areas could be SF Common room (Drama), New Sixth form common room (Costa), Old Library, New library.

This would be a total of 4 APs at the moment. I would also check the signal in the loft area to see if we need to put an additional AP in there to ensure maximum signal.

This would then leave about 6 access points and no more access points are required in the areas above, I would then use the remaining access points in the Cadbury science building to maximise the signal in that building. Like with the Anstee languages building above, I would work with the suppliers of the system to create heat maps and predictive maps to ensure that we are getting the best signal where we can.

[Future recommendations \(report from Tony Cable\)](#)

To swap out for a like for like position basis, we would need to order 10 more access points to replace where the current existing access points are. The signal will be no worse than at current replacing the old access points in the same locations at the new access points.

Based on the current predictive plans for the new builds, I believe we should order 20 Access points to complete this project, and try to get them into classrooms to try to maximise the signal where possible rather than the best signal being in the corridors.

I would also like to look at the possibility of putting an external access point either on the Chapman sports hall or the Cadbury building (or both) to try and get a better signal across the astro turf for the PE staff when they are doing lessons, or if events are happening outside. We think, if positioned correctly, we should be able to get a wireless signal to about the halfway line of the astro turf.

These costs are yet to be built into the Asset Management Plan, however we will review costs and timings for this for the next iteration.