

Completed by: **Jon Loutensock** Completion date: 08/26/2025

Project description

The AP placement and signal strength predictions are based on assumptions made for signal propagation through interior wall materials. Based on those assumptions there will be a greater margin of error between the prediction and what may be experienced.

Interior wall material was set as hollow block (cinderblock).

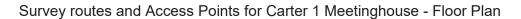
Without measured attenuation and AP signal deviation measurements, the actual signal propagation will vary.

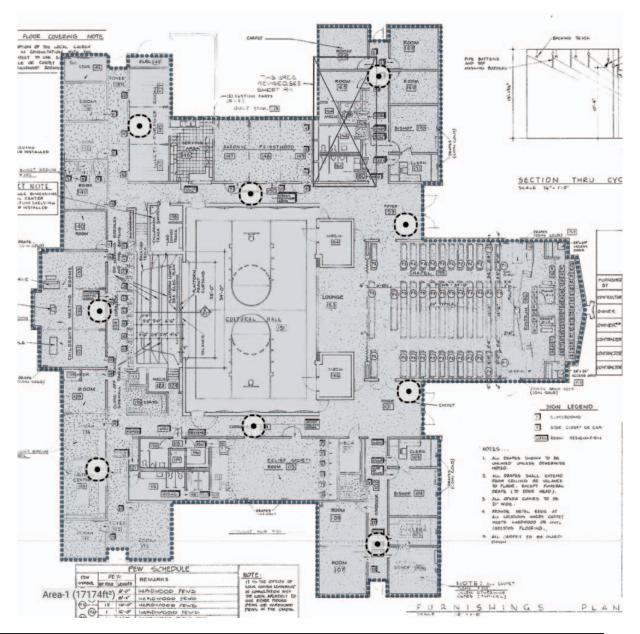
The AP placement was made based on optimizing 5 GHz signals for primary signal strength. Secondary coverage was not a requirement.

The C9172I access point is represented in this prediction.

v.2 - Moved access points from inaccessible areas and added an access point to keep the same coverage.

Carter 1 Meetinghouse - Floor Plan





View as / Project Offset:	Mobile Device

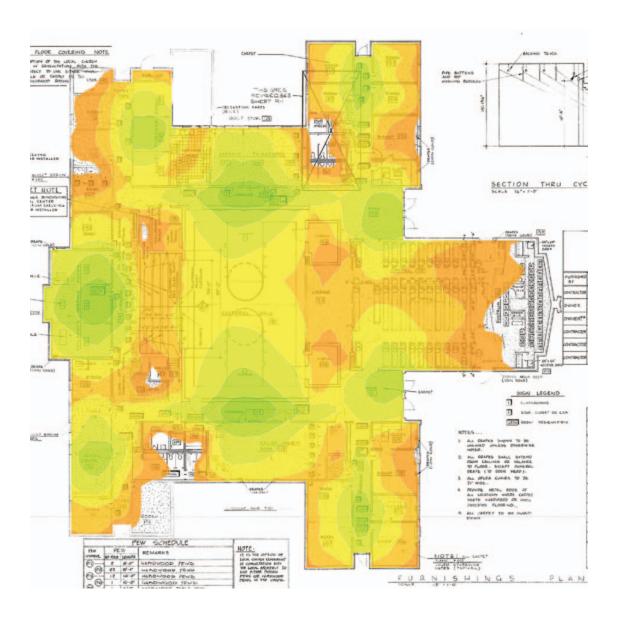
Area-1 (17,174 ft²)

Coverage Requirement: Ekahau Best Practices				
2.4 GHz	Signal Strength Min	-75.0 dBm		

	Signal-to-Noise Ratio Min	20.0 dB
	Data Rate Min	24 Mbps
	Channel Interference Max	2 at min85.0 dBm
	Round Trip Time (RTT) Max	200 ms
	Packet Loss Max	0.0 %
5 GHz	Signal Strength Min	-75.0 dBm
	Secondary Signal Strength Min	-67.0 dBm
	Signal-to-Noise Ratio Min	25.0 dB
	Data Rate Min	24 Mbps
	Channel Interference Max	1 at min85.0 dBm
	Round Trip Time (RTT) Max	200 ms
	Packet Loss Max	0.0 %
6 GHz	Signal Strength Min	-75.0 dBm
6 GHz	Signal Strength Min Secondary Signal Strength Min	-75.0 dBm -67.0 dBm
6 GHz		
6 GHz	Secondary Signal Strength Min	-67.0 dBm
6 GHz	Secondary Signal Strength Min Signal-to-Noise Ratio Min	-67.0 dBm 25.0 dB
6 GHz	Secondary Signal Strength Min Signal-to-Noise Ratio Min Data Rate Min	-67.0 dBm 25.0 dB 24 Mbps
6 GHz	Secondary Signal Strength Min Signal-to-Noise Ratio Min Data Rate Min Channel Interference Max	-67.0 dBm 25.0 dB 24 Mbps 1 at min85.0 dBm
6 GHz Capacity Requirement	Secondary Signal Strength Min Signal-to-Noise Ratio Min Data Rate Min Channel Interference Max Round Trip Time (RTT) Max	-67.0 dBm 25.0 dB 24 Mbps 1 at min85.0 dBm 200 ms
	Secondary Signal Strength Min Signal-to-Noise Ratio Min Data Rate Min Channel Interference Max Round Trip Time (RTT) Max	-67.0 dBm 25.0 dB 24 Mbps 1 at min85.0 dBm 200 ms
	Secondary Signal Strength Min Signal-to-Noise Ratio Min Data Rate Min Channel Interference Max Round Trip Time (RTT) Max Packet Loss Max	-67.0 dBm 25.0 dB 24 Mbps 1 at min85.0 dBm 200 ms
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Signal Strength for Carter 1 Meetinghouse - Floor Plan on 2.4 GHz band

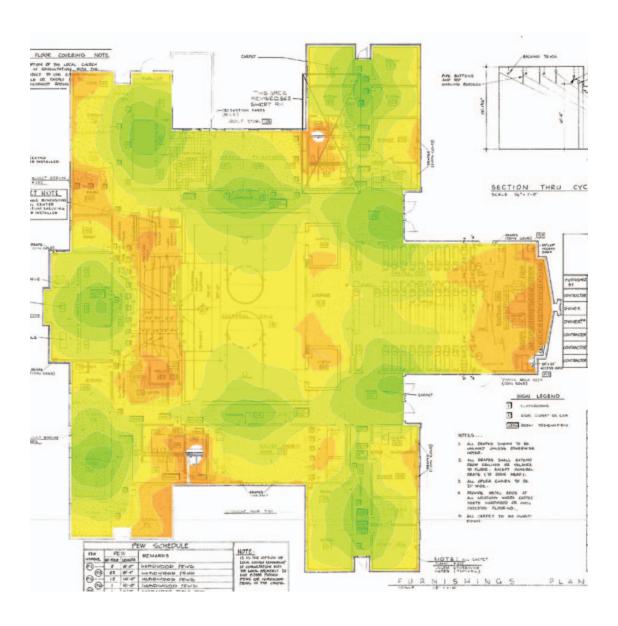
Signal Strength - sometimes called coverage - is the most basic requirement for a wireless network. As a general guideline, low signal strength means unreliable connections, and low data throughput.



-75 dBm ≥ -30 dBm

Signal Strength for Carter 1 Meetinghouse - Floor Plan on 5 GHz band

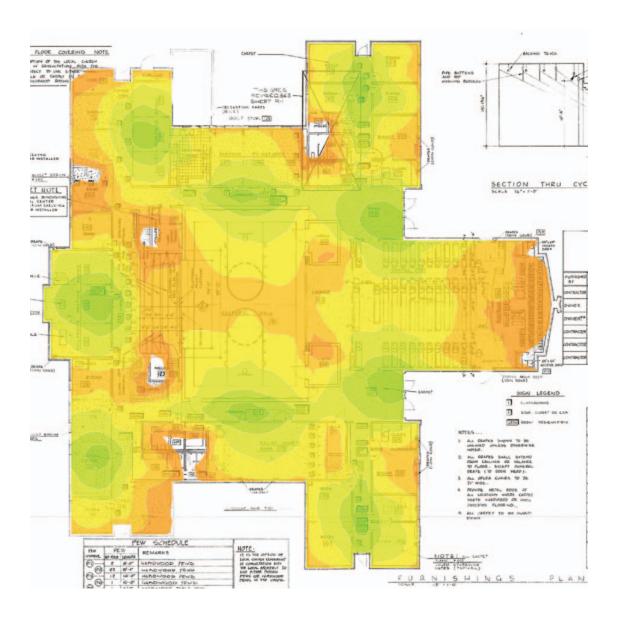
Signal Strength - sometimes called coverage - is the most basic requirement for a wireless network. As a general guideline, low signal strength means unreliable connections, and low data throughput.



-75 dBm ≥ -30 dBm

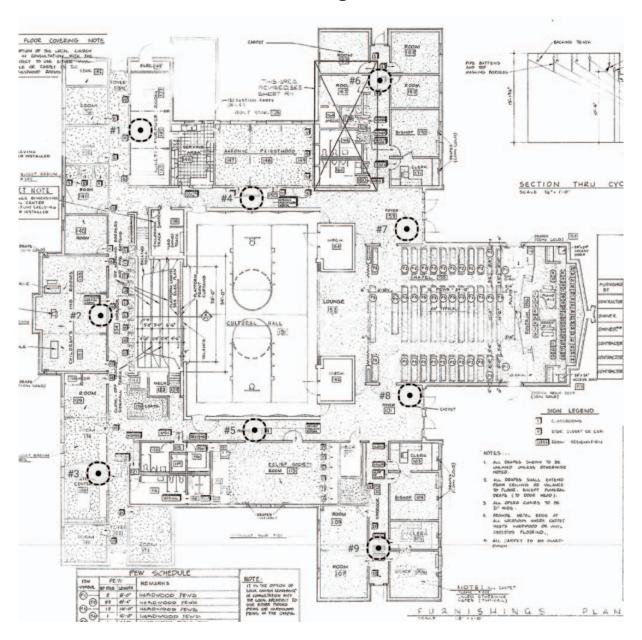
Signal Strength for Carter 1 Meetinghouse - Floor Plan on 6 GHz band

Signal Strength - sometimes called coverage - is the most basic requirement for a wireless network. As a general guideline, low signal strength means unreliable connections, and low data throughput.



-75 dBm ≥ -30 dBm

Access Points on Carter 1 Meetinghouse - Floor Plan



Access Points on Carter 1 Meetinghouse - Floor Plan

Simulated Access Points on Carter 1 Meetinghouse - Floor Plan

Simulated Al	P-001	Cisco CW9172I	
Wi-Fi 7		0.300 000 1721	
	11	8.0 dBm	Cisco CW9172I 2.4GHz
Wi-Fi 7	64	14.0 dBm	Cisco CW9172I 5GHz
Wi-Fi 7	149@80 (6 GHz)	14.0 dBm	Cisco CW9172I 6GHz
Bluetooth	-	0.0 dBm	Cisco CW9172I BLE
Simulated AP-002		Cisco CW9172I	
Wi-Fi 7	6	14.0 dBm	Cisco CW9172l 2.4GHz
Wi-Fi 7	149	14.0 dBm	Cisco CW9172I 5GHz
Wi-Fi 7	53@80 (6 GHz)	14.0 dBm	Cisco CW9172I 6GHz
Bluetooth	-	0.0 dBm	Cisco CW9172I BLE
Simulated AP-003		Cisco CW9172I	
Wi-Fi 7	1	8.0 dBm	Cisco CW9172I 2.4GHz
Wi-Fi 7	108	14.0 dBm	Cisco CW9172I 5GHz
Wi-Fi 7	181@80 (6 GHz)	14.0 dBm	Cisco CW9172I 6GHz
Bluetooth	-	0.0 dBm	Cisco CW9172I BLE
Simulated AP-004		Cisco CW9172I	
Wi-Fi 7	1	14.0 dBm	Cisco CW9172I 2.4GHz
Wi-Fi 7	36	14.0 dBm	Cisco CW9172I 5GHz
Wi-Fi 7	213@80 (6 GHz)	14.0 dBm	Cisco CW9172I 6GHz
Bluetooth	-	0.0 dBm	Cisco CW9172I BLE
Simulated AP-005		Cisco CW9172I	
Wi-Fi 7	11	14.0 dBm	Cisco CW9172I 2.4GHz
Wi-Fi 7	165	14.0 dBm	Cisco CW9172I 5GHz
Wi-Fi 7	101@80 (6 GHz)	14.0 dBm	Cisco CW9172I 6GHz
	Wi-Fi 7 Bluetooth Simulated Af Wi-Fi 7 Wi-Fi 7	Wi-Fi 7	Wi-Fi 7 149@80 (6 GHz) 14.0 dBm Bluetooth - 0.0 dBm Simulated AP-002 Cisco CW9172I Wi-Fi 7 6 14.0 dBm Wi-Fi 7 149 14.0 dBm Wi-Fi 7 53@80 (6 GHz) 14.0 dBm Bluetooth - 0.0 dBm Simulated AP-003 Cisco CW9172I Wi-Fi 7 1 8.0 dBm Wi-Fi 7 108 14.0 dBm Wi-Fi 7 181@80 (6 GHz) 14.0 dBm Bluetooth - 0.0 dBm Simulated AP-004 Cisco CW9172I Wi-Fi 7 1 4.0 dBm Wi-Fi 7 213@80 (6 GHz) 14.0 dBm Bluetooth - 0.0 dBm Simulated AP-005 Cisco CW9172I Wi-Fi 7 11 14.0 dBm Wi-Fi 7 165 14.0 dBm Wi-Fi 7 101@80 (6 14.0 dBm

	Bluetooth	-	0.0 dBm	Cisco CW9172I BLE
6	Simulated AP-006		Cisco CW9172I	
	Wi-Fi 7	6	8.0 dBm	Cisco CW9172l 2.4GHz
	Wi-Fi 7	48	14.0 dBm	Cisco CW9172I 5GHz
	Wi-Fi 7	165@80 (6 GHz)	14.0 dBm	Cisco CW9172l 6GHz
	Bluetooth	-	0.0 dBm	Cisco CW9172I BLE
7	Simulated Al	P-007	Cisco CW9172I	
	Wi-Fi 7	11	8.0 dBm	Cisco CW9172l 2.4GHz
	Wi-Fi 7	100	14.0 dBm	Cisco CW9172I 5GHz
	Wi-Fi 7	1@80 (6 GHz)	14.0 dBm	Cisco CW9172l 6GHz
	Bluetooth	-	0.0 dBm	Cisco CW9172l BLE
8	Simulated AP-008		Cisco CW9172I	
	Wi-Fi 7	6	8.0 dBm	Cisco CW9172l 2.4GHz
	Wi-Fi 7	132	14.0 dBm	Cisco CW9172I 5GHz
	Wi-Fi 7	5@80 (6 GHz)	14.0 dBm	Cisco CW9172l 6GHz
	Bluetooth	-	0.0 dBm	Cisco CW9172I BLE
9	Simulated AP-009		Cisco CW9172I	
	Wi-Fi 7	1	8.0 dBm	Cisco CW9172I 2.4GHz
	Wi-Fi 7	116	14.0 dBm	Cisco CW9172I 5GHz
	Wi-Fi 7	117@80 (6 GHz)	14.0 dBm	Cisco CW9172l 6GHz
	Bluetooth	-	0.0 dBm	Cisco CW9172l BLE