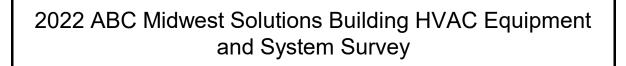
Date	5/4/2022
ABC WO #	0108
Project Title	2022 Initial Building Survey
Action Item	Building Survey of the Elvehjem Arts Building



Date	5/4/2022
Work Order #	0108
Building #	0544
Action Item	
	List of Summaries and Problems that needed to get addressed at the Elvehjem Arts Building as of 5/9/2022

### Brief Summary of the HVAC equipment and Systems and 86 ACTION ITEMS

(Air Volume Summary)	The current summary sheet in this report indicates that there is a 18,213 excessive amount of air being brought into the building, when the units are attempting to utilized 100% outside air for free cooling, thus making it positive to the outside. I feel this number is misleading because of the way the air is "ducted" back to the equipment room and from there it has to "exhaust" itself out of the facility. In most buildings, you duct the air directly out of the building, or, by definition, "exhaust" it. This application, air is brought back to the equipment room and it the pressurizes the 6th floor requipment room. The air is "returned" and intended to be "exhausted". This application, air is brought back to the main equipment room and it the pressurizes the 6th floor requipment or the air is "returned" and intended to be "exhausted". This application, air is brought back to the main equipment room and it the pressurizes the floor parts the air to do that because those huge reliefs have a slight pressure drop and the 5th floor rechanical room is actually extended down to the 2nd floor through a series of open chases, making those 2nd floor rooms part of the pressurized 5th floor mechanical room. The only thing stopping the air forwanting to leave that 2nd floor pressurized 5th floor or doors, if you include the four 2nd floor mechanical rooms and four leaky chases, is a lot of area to allow that air to enter at a low velocity. One of those doors are located right next to the 2nd floor exist to the building, room 207, and the other rooms have additional doors in sections are isotopping the direct flow; however, they are all connected to the huge open common sections of the building. Those sections are just pressurizing while those internal door restrict the air flow until they are opened. When the outside doors are isotopping the direct flow; however, they are all connected to the huge open common sections of the building. Thus making it seem as if the building is "pressurized". It is designed to be that way, in
(Wisconsin Energy Initiative)	A major change to the way the HVAC system operates happened around 1990 - 1991. Those modifications were construed "upgrades" to this equipment that are common to the 5th floor Mechanical room Penthouse space. I speculate it was with the Wis Energy Initiative (WEI - 1 through 5 maybe). WEI addressed and funded the replacement of older pneumatic logic controls and original electric blower motors that control the discharge temperatures and mixing and economizing air volumes with JCI ESCO funds and JCI Metasys DDC controls. It was a way to fund upgrading equipment and all involved knew the complexities of the pro's and con's of this issue. A commonly discovered drawback to that "upgrade" and "nutual savings ESCO program" is that there was no Licensed PE overseeing the upgrade and "details to the exact buildings replacement / upgrade requirements" tended to be "neglected" at best. I am not surprised by the issues I am finding.
(Unit Housing)	The housing of AHU 1 though AHU 4 are somewhat "newer" and look like they were installed somewhere around 1988. The housing of AHU S -1 though AHU S - 10 are from the original installation of the building. Circa late 1960's. The housing of return and exhaust fans E - 1 though E - 18 are from the original installation of the building. Circa late 1960's.
(Units Excessive Grease)	There are two external bearings on most of the units. Every year grease is applied multiple times during its standard maintenance; however, it has accumulated and is starting to drip on the floors and being flung to the surrounding areas and being carried to the floors of the museum. Campus security even pointed out the issue on their rounds that it can be seen in the carpet outside of room 272N and is a concern of theirs.
(Safety issues)	Each external bearing is "exposed" and anyone not paying attention could get caught in the rotating item. Each unit in the mechanical room should be considered to have a protective cap installed over the rotating bearing for protection AND to contain any grease that may fly off of it during its normal operation.
(Unit Condensing Coils)	The evaporative cooling coils in most of the units are original, have turned "green" and their structural bases are rotted out. In other words, they appear to be at the end of their life-cycle and I have indicated which ones below.
(Unit's Condensing pans)	The bottom inner lining of some of the AHU's condensate pans are at the end of their life-cycle. The insulation barriers have been compromised, are bubbling and look like the sheet metal underneath them have corroded and could have leakage problems soon. AHU - 9 currently has a pan underneath the unit to catch its dripping condensate but that is not a solution, just a band-aid. More may be needed in the future. Just be aware of it.
(Unit Temperature Controls)	The original pneumatic temperature controls are gone. They were upgraded 1990-1991 with JCI AHU Controllers and UNT Cards. I speculate the UW - DDC Shop would like to upgrade them to newer than 1990 - 1991 controls; however, the DIGITAL PARTS are currently "working" and able to achieve the desired temperature controls.
(Unit Volumetric Controls)	EVERY PNEUMATIC DAMPER MOTOR, THAT HAS A PILOT POSITIONER, on unit in the 5th floor Mechanical room Penthouse, HAS TO BE REMOUNTED AND RECALIBRATED TO DDC OUTPUTS. The newer pneumatic damper motor shaft connections (beyond the "D" setting" on the JCI factory armature location) indicate they are incapable of achieving a minimum of a ninety degree field of operation. They all need service because the damper shafts are connected to far out on the armature that connects to the damper shaft. It is a simple Pythagorean triangle problem. A squared plus B squared equals C squared. If your shaft travel is 3 inches, and you want a 90 degree angle, you have to mount 2.121 inches from the centerline of the shaft. ALL the damper motors with plut positioner (AHU S - 5 for example) have damper motors that do not track correctly and are going to suffer from volumetric mismatch issues and have huge potential for building pressure problems. This brings up issues beyond my scope of involvement. To upgrade and address the pneumatic issues or to eliminate the pneumatics with newer DDC controls and newer electrically controlled motors. Both have pros and cons and both have costs and politics, both beyond my scope in this project.
(Control Damper Issues)	The outside air dampers on most of the units have "a lot of play" in them and need more than a 90 degree stroke to get them to control. This means repairs should be discussed by the owner for upgrades. In the punch list below, I have which ones are a problems but all have issues.
(Blowers and their housings)	Most of the AHU's blower wheels and housings appeared to be original, full of rust on the outside and in some cases had "mangled" inlet volutes; however, their were no alignment or wearing issues. I did notice that a considerable number of the units had the "less than desirable" installation of the blower housing arrangement from the original installation. It is just not as efficient as it could have beensince 1961

(Air Flow Measuring Stations) I did not discover any air flow measuring stations, on any equipment, in my investigation.

1 Air Handling Unit	AHU # 1	UW Asset Number 111515	UW PM Number 0554-019B			
Detailed Summary	exist on this unit. It ju	st recirculates the air.	e its original motor and is warm to noving too much air volume in the			is going on with the age of the bearings. The inlet air control dampers do not
			1 2022 Action Item	UW Safety	Bearing Exposure and Excessive grease	The blower bearings are exposed and could hurt someone if were to

				UW Maintenance UW Sheet Metal Shop	on bearings and floor	accidently put their hand on it. The UW should consider putting a protectiv cap over the outside of them to prevent harm and contain the grease.
Air Handling Unit	AHU # 2	UW Asset Number Unknown	UW PM Number Unknown			
Detailed Summary	exist on this unit. It ju	ust recirculates the air.	ve its original motor and is wa moving too much air volume ir			is going on with the age of the bearings. The inlet air control dampers do no
			2 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protectiv cap over the outside of them to prevent harm and contain the grease.
Air Handling Unit	AHU # 3	UW Asset Number 112209	UW PM Number 0554-021A			
Detailed Summary	exist on this unit. It ju	ust recirculates the air.	ve its original motor and is wa between the OA and RA damp		s appear to be in great shape. I'm not sure what	is going on with the age of the bearings. The inlet air control dampers do no
			3 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protectin cap over the outside of them to prevent harm and contain the grease.
			4 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues on the Relief and Outside Air damper motors	The pneumatic damper motors on the Relief and Outside Air dampers are installed incorrectly and need to be remounted and calibrated to the DDC output signals. They currently do not function correctly.
4 Air Handling Unit	AHU # 4	UW Asset Number 112205	UW PM Number 0554-019A			
Detailed Summary		ust recirculates the air.	5 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	is going on with the age of the bearings. The inlet air control dampers do no The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protect cap over the outside of them to prevent harm and contain the grease.
Air Handling Unit	AHU S - 1	UW Asset Number	UW PM Number 0554-023			
		112212	0554-023			
Detailed Summary	bearings look larger to Damper Motors, with proper performance. pressure. This NEG/	old and from the 1960's. The han what it left the factory fro pilot positioners, but the two Also, I believe the Eastern N ATIVE pressure is partially be e building to have more outsi	e electric motor was found to b m too which means they've b internal Mixing Air damper mo lix Air Damper never closes. cause the equipment room is	een serviced recently. The tors do not. They appear to Because it never closes, the used as part of the Relief Air	inlet air control dampers also have multiple issue be of a smaller style, more like a "VAV box style" discharge pressure reading for its return / relief	pneumatic damper motors and do not have pilot positioners to aid them in fan, E-9, has a NEGATIVE discharge reading when compared to the room ndicate outside air is going backwards through discharge of E-9 and back ir
Detailed Summary	bearings look larger t Damper Motors, with proper performance. pressure. This NEG/ AHU S - 1 causing th	old and from the 1960's. The han what it left the factory fro pilot positioners, but the two Also, I believe the Eastern N ATIVE pressure is partially be e building to have more outsi	e electric motor was found to b m too which means they've b internal Mixing Air damper mo lix Air Damper never closes. cause the equipment room is	een serviced recently. The tors do not. They appear to Because it never closes, the used as part of the Relief Air	inlet air control dampers also have multiple issue be of a smaller style, more like a "VAV box style" discharge pressure reading for its return / relief Plenum and is "positive" to the outside but may i	s. The Outdoor Air intake and two Return Air damper motors have newer JC pneumatic damper motors and do not have pilot positioners to aid them in fan, E-9, has a NEGATIVE discharge reading when compared to the room indicate outside air is going backwards through discharge of E-9 and back ir ed and repaired. The blower bearings are exposed and could hurt someone if were to
Detailed Summary	bearings look larger t Damper Motors, with proper performance. pressure. This NEG/ AHU S - 1 causing th	old and from the 1960's. The han what it left the factory fro pilot positioners, but the two Also, I believe the Eastern N ATIVE pressure is partially be e building to have more outsi	e electric motor was found to to m too which means they've b internal Mixing Air damper mo lix Air Damper never closes. cause the equipment room is de air being brought in than is	een serviced recently. The tors do not. They appear to Because it never closes, the used as part of the Relief Air normally measured. The dar UW Safety UW Maintenance	inlet air control dampers also have multiple issue be of a smaller style, more like a "VAV box style" discharge pressure reading for its return / relief Plenum and is "positive" to the outside but may in per, and its damper motor, need to get addresse Bearing Exposure and Excessive grease	s. The Öudöor Air intake and two Return Air damper motors have newer JC preumatic damper motors and do not have pilot positioners to aid them in fan, E-9, has a NEGATIVE discharge reading when compared to the room ndicate outside air is going backwards through discharge of E-9 and back in ed and repaired. The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protectification of the terms of terms of the terms of terms of the terms of the terms of the terms of terms o
Detailed Summary	bearings look larger t Damper Motors, with proper performance. pressure. This NEG/ AHU S - 1 causing th	old and from the 1960's. The han what it left the factory fro pilot positioners, but the two Also, I believe the Eastern N ATIVE pressure is partially be e building to have more outsi	e electric motor was found to b internal Mixing Air damper mo lix Air Damper never closes. cause the equipment room is de air being brought in than is 6 2022 Action Item	een serviced recently. The tors do not. They appear to Because it never closes, the used as part of the Relief Air normally measured. The dar UW Safety UW Maintenance UW Sheet Metal Shop	Iniet air control dampers also have multiple issue be of a smaller style, more like a "VAV box style" discharge pressure reading for its return / relief Plenum and is "positive" to the outside but may imper, and its damper motor, need to get addresse Bearing Exposure and Excessive grease on bearings and floor	s. The Outdoor Air intake and two Return Air damper motors have newer JC preumatic damper motors and do not have pilot positioners to ald them in fan. E-9, has a NEGATIVE discharge reading when compared to the room ndicate outside air is going backwards through discharge of E-9 and back in d and repaired. The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protectiv cap over the outside of them to prevent harm and contain the grease. The pneumatic damper motors on the Relief and Outside Air dampers are installed incorrectly and need to be remounted and calibrated to the DDC
Detailed Summary	bearings look larger t Damper Motors, with proper performance. pressure. This NEG/ AHU S - 1 causing th	old and from the 1960's. The han what it left the factory fro pilot positioners, but the two Also, I believe the Eastern N ATIVE pressure is partially be e building to have more outsi	e electric motor was found to b im too which means they've b internal Mixing Air damper mo fix Air Damper never closes. Cause the equipment room is de air being brought in than is 6 2022 Action Item 7 2022 Action Item	een serviced recently. The tors do not. They appear to Because it never closes, the used as part of the Relief Air normally measured. The dar UW Safety UW Maintenance UW Sheet Metal Shop UW Digital Controls	Iniet air control dampers also have multiple issue be of a smaller style, more like a "VAV box style" discharge pressure reading for its return / relief Plenum and is "positive" to the outside but may i mper, and its damper motor, need to get address Bearing Exposure and Excessive grease on bearings and floor Pneumatic damper motor issues on the Relief and Outside Air damper motors	s. The Outdoor Air intake and two Return Air damper motors have newer JC preumatic damper motors and do not have pilot positioners to aid them in fan, E-9, has a NEGATIVE discharge reading when compared to the room ndicate outside air is going backwards through discharge of E-9 and back in ed and repaired. The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protectic cap over the outside of them to prevent harm and contain the grease. The pneumatic damper motors on the Relief and Outside Air dampers are installed incorrectly and need to be remounted and calibrated to the DDC output signals. They currently do not function correctly. The mixed air dampers do not track the Return and Exhaust air dampers correctly. The damper motors need to be mounted correctly. The damper

					due to physical restrictions	the ductwork along with their associated damper motors. It appears the damper on the Eastside of the unit does not close all the way and the Westside one does not close at all. I speculate they are physically binding or not capable of functioning with the current damper motors that are installed.
			11 2022 Action Item	UW Sheet Metal Shop	Install Access Door for service and repair.	Current access doors are in the wrong location for the mixing dampers. I would like the Sheet Metal Shop to install access doors to both service and inspect the dampers and their motors. DDC can then calibrate the damper motors and get the system working correctly.
			12 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
6 Air Handling Unit	AHU S - 2	UW Asset Number 112211	UW PM Number 0554-022			
Detailed Summary	bearings look larger internal Mixing Air da	than what it left the factory fro amper motors are "VAV box st reading for E-10 is also NEGA side.	om too which means they've b yle" pneumatic damper motors	een serviced recently. The and do not have pilots. I be	inlet control dampers also have multiple issues. elieve the Eastern Damper on this unit only PART	working really hard. The blowers appear "aged and seasoned". The fan The Outdoor Air and two Return Air damper motors have pilots but the two IALLY closes. AHU S-1 has a similar damper motor issues, only worse. The cause the equipment room is used as part of the Relief Air Plenum and is
			13 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protective cap over the outside of them to prevent harm and contain the grease.
			14 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues	The pneumatic damper motors on the Relief and Outside Air dampers are installed incorrectly and need to be remounted and calibrated to the DDC output signals. They currently do not function correctly.
			15 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues on the Mixing Air damper motors.	The mixed air dampers do not track the Return and Exhaust air dampers correctly. The damper motors need to be mounted correctly. The dampers themselves appear to bind also and may affect the DDC interface.
			16 2022 Action Item	UW Sheet Metal Shop	Outside Air Dampers have excessive play and do not track or open correctly.	There are three banks of Outside air dampers. When cycled, they do not track correctly and my have to be replaced.
			17 2022 Action Item	UW Sheet Metal Shop	Mixed air dampers not closing due to physical restrictions	This unit has two mixed air dampers. Both dampers are concealed inside of the ductwork along with their associated damper motors. It appears the damper on the Eastside of the unit does not close all the way and the Westside one does not close at all. I speculate they are physically binding or not capable of functioning with the current damper motors that are installed.
			18 2022 Action Item	UW Sheet Metal Shop	Install Access Door for service and repair.	Current access doors are in the wrong location for the mixing dampers. I would like the Sheet Metal Shop to install access doors to both service and inspect the dampers and their motors. DDC can then calibrate the damper motors and get the system working correctly.
			19 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
7 Air Handling Unit	AHU S - 3	UW Asset Number 112203	UW PM Number 0554-018			
Detailed Summary	bearings look larger internal Mixing Air da	than what it left the factory fro amper motors are "VAV box st reading for E-11 is also NEGA	om too which means they've b yle" pneumatic damper motors	een serviced recently. The and do not have pilots. I be	inlet control dampers also have multiple issues. elieve the Eastern Damper on this unit only PART	working really hard. The blowers appear "aged and seasoned". The fan The Outdoor Air and two Return Air damper motors have pilots but the two IALLY closes. AHU S-4 has a similar damper motor issues, only worse. The cause the equipment room is used as part of the Relief Air Plenum and is

Serves 1,2+3 No	orth
-----------------	------

Serves 1,213 Norun				
	20 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protective cap over the outside of them to prevent harm and contain the grease.
	21 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues	The mixed air dampers do not track the Return and Exhaust air dampers correctly. The damper motors need to be mounted correctly and the pilot positioners need to be recalibrated to the DDC outputs.
	22 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues and mixed air dampers not closing all the way.	This unit has two mixed air dampers. Both dampers and their linkages are concealed inside of the ductwork. It appears the damper on this unit is of a newer style, are mounted external to the unit and does NOT have a pilot on it. It should have a pilot properly installed if the UW decides to stay with pneumatic controls, and it should be calibrated.
	23 2022 Action Item	UW Sheet Metal Shop	Outside Air Dampers have excessive play and do not track or open correctly.	There are three banks of Outside air dampers. When cycled, they do not track correctly and my have to be replaced.
	24 2022 Action Item	UW Sheet Metal Shop	Mixed air dampers not closing due to physical restrictions	This unit has two mixed air dampers. Both dampers are concealed inside of the ductwork along with their associated damper motors. It appears the damper on the Eastside of the unit does not close all the way and the Westside one does not close at all. I speculate they are physically binding or not capable of functioning with the current damper motors that are installed.
	25 2022 Action Item	UW Sheet Metal Shop	Install Access Door for service and repair.	Current access doors are in the wrong location for the mixing dampers. I would like the Sheet Metal Shop to install access doors to both service and inspect the dampers and their motors. DDC can then calibrate the damper motors and get the system working correctly.
		UW Sheet Metal Shop	Small pan installed under expansion joint.	There is a long and narrow drip pan installed under the flexible expansion joint. It is there to catch condensate.
	26 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
UW Asset Num AHU S - 4 112201	ber UW PM Number 0554-017			
larger than what it left the factory from to	oo which means they've been serviced re	cently. The inlet control da		working hard. The blowers appear "aged and seasoned". The fan bearings look ir and two Return Air damper motors have pilots but the two internal Mixing Air
	27 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protective cap over the outside of them to prevent harm and contain the grease.
	28 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues	The mixed air dampers do not track the Return and Exhaust air dampers correctly. The damper motors need to be mounted correctly and the pilot positioners need to be recalibrated to the DDC outputs.
	29 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues and mixed air dampers not closing all the way.	This unit has two mixed air dampers. Both dampers and their linkages are concealed inside of the ductwork. It appears the damper on this unit is of a newer style, are mounted external to the unit and does NOT have a pilot on it. It should have a pilot properly installed if the UW decides to stay with pneumatic controls, and it should be calibrated.
	30 2022 Action Item	UW Sheet Metal Shop	Outside Air Dampers have excessive play and do not track or open correctly.	There are three banks of Outside air dampers. When cycled, they do not track correctly and my have to be replaced.
	31 2022 Action Item	UW Sheet Metal Shop	Mixed air dampers not closing	This unit has two mixed air dampers. Both dampers are concealed inside of the ductwork along with their associated damper motors. It appears the

8 Air Handling Unit

Detailed Summary

					due to physical restrictions	damper on the Eastside of the unit does not close all the way and the Westside one does not close at all. I speculate they are physically binding o not capable of functioning with the current damper motors that are installed.
			32 2022 Action Item	UW Sheet Metal Shop	Install Access Door for service and repair.	Current access doors are in the wrong location for the mixing dampers. I would like the Sheet Metal Shop to install access doors to both service and inspect the dampers and their motors. DDC can then calibrate the damper motors and get the system working correctly.
				UW Sheet Metal Shop	Small pan installed under expansion joint.	There is a long and narrow drip pan installed under the flexible expansion join It is there to catch condensate. There is no pan completely under the unit.
			33 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
9 Air Handling Unit	AHU S - 5	UW Asset Number 112196	UW PM Number 0554-014			
Detailed Summary		the factory from too which				working hard. The blowers appear "aged and seasoned". The fan bearings lo ir and two Return Air damper motors do NOT have pilots and volumetric tracking
			34 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protective cap over the outside of them to prevent harm and contain the grease.
			35 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues	The mixed air dampers do not track the Return and Outdoor Air dampers correctly. The damper motors need pilot positioner if they are going to continue using pneumatic damper motors.
			36 2022 Action Item	UW Maintenance	Bearing Exposure and Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
				UW Sheet Metal Shop	Unit Condensate Pan	There is no condensate pan under this unit.
# Air Handling Unit	AHU S - 6	UW Asset Number 112198	UW PM Number 0554-015			
Detailed Summary		the factory from too which				working hard. The blowers appear "aged and seasoned". The fan bearings lo ir and two Return Air damper motors do NOT have pilots and volumetric trackin
			37 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protective cap over the outside of them to prevent harm and contain the grease.
			38 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues	The mixed air dampers do not track the Return and Outdoor Air dampers correctly. The damper motors need pilot positioner if they are going to continue using pneumatic damper motors.
			39 2022 Action Item	UW Maintenance	Bearing Exposure and Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
				UW Sheet Metal Shop	Unit Condensate Pan	There is no condensate pan under this unit.
# Air Handling Unit	AHU S - 7	UW Asset Number 112207	UW PM Number 0554-020			

		e factory from too which e addressed.				working hard. The blowers appear "aged and seasoned". The fan bearings is ir and two Return Air damper motors do NOT have pilots and volumetric tracki
			40 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protective cap over the outside of them to prevent harm and contain the grease.
			41 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues	The mixed air dampers do not track the Return and Outdoor Air dampers correctly. The damper motors need pilot positioner if they are going to continue using pneumatic damper motors.
			42 2022 Action Item	UW Maintenance	Bearing Exposure and Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping on the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
				UW Sheet Metal Shop	Unit Condensate Pan	There is no condensate pan under this unit.
Air Handling Unit	AHU S - 8	UW Asset Number 112206	UW PM Number 0554-019			
Detailed Summary		e factory from too which				working hard. The blowers appear "aged and seasoned". The fan bearings i ir and two Return Air damper motors do NOT have pilots and volumetric track
			43 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protectiv cap over the outside of them to prevent harm and contain the grease.
			44 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues	The mixed air dampers do not track the Return and Outdoor Air dampers correctly. The damper motors need pilot positioner if they are going to continue using pneumatic damper motors.
						There is a 24 Volt EPT that is leaking excessive amounts of air.
			45 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping on the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
				UW Sheet Metal Shop	Unit Condensate Pan	There is no condensate pan under this unit.
Air Handling Unit	AHU S - 9	UW Asset Number 112199	UW PM Number 0554-016			
Detailed Summary		e factory from too which e addressed.				working hard. The blowers appear "aged and seasoned". The fan bearings i ir and two Return Air damper motors do NOT have pilots and volumetric track
			46 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protectiv cap over the outside of them to prevent harm and contain the grease.
			47 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues	The mixed air dampers do not track the Return and Outdoor Air dampers correctly. The damper motors need pilot positioner if they are going to continue using pneumatic damper motors.

				UW Sheet Metal Shop		There is no condensate pan under this unit.
# Air Handling Unit	AHU S - 10	UW Asset Number 112208	UW PM Number 0554-021			
Detailed Summary		eft the factory from too which				ot working hard. The blowers appear "aged and seasoned". The fan bearings k Air and two Return Air damper motors do NOT have pilots and volumetric track
			49 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protective cap over the outside of them to prevent harm and contain the grease.
			50 <b>2022 Action Item</b>	UW Digital Controls	Pneumatic damper motor issues	The mixed air dampers do not track the Return and Outdoor Air dampers correctly. The damper motors need pilot positioner if they are going to continue using pneumatic damper motors.
			51 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping on the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
				UW Sheet Metal Shop	Unit Condensate Pan	There is no condensate pan under this unit.
# Exhaust Fan 1	E - 1	UW Asset Number 112200	UW PM Number 0554-035			
Detailed Summary	This unit was discov	vered in Room 207 and appe		tested and was low on its de	outdoor air intake plenum of AHU S - 5. ssign air volume from the original drawings. n AHU S - 5.	
			о ,			
			52 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping on the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
# Exhaust Fan 2	E-2	UW Asset Number 112200		UW Maintenance		the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums
∉ Exhaust Fan 2 Detailed Summary	E - 2 This unit is one of tv This unit was discov	UW Asset Number 112200 wo return fans for AHU S - 1. vered in Room 207 and appe	52 2022 Action Item UW PM Number 0554-035 It returns the air to either the 5	th floor mechanical room or ii tested and was low on its de	Excessive grease on bearings and floor	the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums
	E - 2 This unit is one of tv This unit was discov	UW Asset Number 112200 wo return fans for AHU S - 1. vered in Room 207 and appe	52 2022 Action Item UW PM Number 0554-035 It returns the air to either the 50 ared to be operating ok. It was	th floor mechanical room or ii tested and was low on its de	Excessive grease on bearings and floor	the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
Detailed Summary	E - 2 This unit is one of tv This unit was discov	UW Asset Number 112200 wo return fans for AHU S - 1. vered in Room 207 and appe	52 2022 Action Item UW PM Number 0554-035 It returns the air to either the 5 ared to be operating ok. It was ors tracking AND they are noted	th floor mechanical room or i tested and was low on its d i in the comments earlier witt	Excessive grease on bearings and floor nto the outdoor air intake plenum of AHU S - 1. sign air volume from the original drawings. n AHU S - 1.	the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
Detailed Summary	E - 2 This unit is one of tu This unit was disco There are issues wi E - 3 This unit is one of tu This unit was disco	UW Asset Number 112200 wo return fans for AHU S - 1. vered in Room 207 and appe ith its pneumatic damper moto UW Asset Number 112200 wo return fans for AHU S - 2. vered in Room 272N and app	52 2022 Action Item UW PM Number 0554-035 It returns the air to either the 50 ared to be operating ok. It was ors tracking AND they are noted 53 2022 Action Item UW PM Number 0554-035 It returns the air to either the 50	th floor mechanical room or in tested and was low on its d d in the comments earlier with UW Maintenance th floor mechanical room or in is tested and was low on its	Excessive grease on bearings and floor nto the outdoor air intake plenum of AHU S - 1. sign air volume from the original drawings. n AHU S - 1. Excessive grease on bearings and floor nto the outdoor air intake plenum of AHU S - 2. design air volume from the original drawings.	the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
Detailed Summary	E - 2 This unit is one of tu This unit was disco There are issues wi E - 3 This unit is one of tu This unit was disco	UW Asset Number 112200 wo return fans for AHU S - 1. vered in Room 207 and appe ith its pneumatic damper moto UW Asset Number 112200 wo return fans for AHU S - 2. vered in Room 272N and app	52 2022 Action Item UW PM Number 0554-035 It returns the air to either the 5 ared to be operating ok. It was ors tracking AND they are noted 53 2022 Action Item UW PM Number 0554-035 It returns the air to either the 5 eared to be operating ok. It was	th floor mechanical room or in tested and was low on its d d in the comments earlier with UW Maintenance th floor mechanical room or in is tested and was low on its	Excessive grease on bearings and floor nto the outdoor air intake plenum of AHU S - 1. sign air volume from the original drawings. n AHU S - 1. Excessive grease on bearings and floor nto the outdoor air intake plenum of AHU S - 2. design air volume from the original drawings.	the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
# Exhaust Fan 3	E - 2 This unit is one of tu This unit was disco There are issues wi E - 3 This unit is one of tu This unit was disco	UW Asset Number 112200 wo return fans for AHU S - 1. vered in Room 207 and appe ith its pneumatic damper moto UW Asset Number 112200 wo return fans for AHU S - 2. vered in Room 272N and app	52 2022 Action Item UW PM Number 0554-035 It returns the air to either the 5/ ared to be operating ok. It was ors tracking AND they are noted 53 2022 Action Item UW PM Number 0554-035 It returns the air to either the 5/ eared to be operating ok. It was ors tracking AND they are noted	th floor mechanical room or in tested and was low on its de in the comments earlier with UW Maintenance th floor mechanical room or in is tested and was low on its d in the comments earlier with	Excessive grease on bearings and floor to the outdoor air intake plenum of AHU S - 1. sign air volume from the original drawings. nAHU S - 1. Excessive grease on bearings and floor nto the outdoor air intake plenum of AHU S - 2. design air volume from the original drawings. n AHU S - 2.	The "gobs of grease" on the bearing housings are spraying and dripping ont the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.

			55 2022 Action Item	UW Sheet Metal Shop	Excessive high discharge pressure	This unit was tested and it was discovered that the discharge pressure was really high at the fan but much lower in the mechanical room above it.
			56 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
# Exhaust Fan 5	E - 5	UW Asset Number 112200	UW PM Number 0554-035			
Detailed Summary	This unit was discove	red in Room 247 and appea		tested and was low on its de	outdoor air intake plenum of AHU S - 8. esign air volume from the original drawings. h AHU S - 8.	
			57 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
# Exhaust Fan 6	E - 6	UW Asset Number 112200	UW PM Number 0554-035			
Detailed Summary	This unit was discove	red in Room 247 and appea		tested and was low on its de	nto the outdoor air intake plenum of AHU S - 3. esign air volume from the original drawings. h AHU S - 3.	
			58 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
# Exhaust Fan 7	E - 7	UW Asset Number 112200	UW PM Number 0554-035			
Detailed Summary	This unit was discove	red in Room 227 and appea		tested and was low on its de	nto the outdoor air intake plenum of AHU S - 4. ssign air volume from the original drawings. h AHU S - 4.	
			59 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
# Exhaust Fan 8	E - 8	UW Asset Number 112200	UW PM Number 0554-035			
Detailed Summary	This unit was discove	red in Room 227 and appea		tested and was low on its de	outdoor air intake plenum of AHU S - 6. esign air volume from the original drawings. h AHU S - 6.	
			60 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
# Exhaust Fan 9	E - 9	UW Asset Number 112200	UW PM Number 0554-045			
Detailed Summary	This unit was discove	red on and running. There a		e damper motors and damp	ers and will probably require more access doors	it out of the building, unlike the other return fan for the unit, $E$ - 2. to properly service the issues.
			61 2022 Action Item	UW Sheet Metal Shop	Ductwork on the inlet needs repair	A dovetail fitting on the ductwork closes to the main inlet of E-9 has pulled apart and the air from the mechanical room is allowed to be drawn into this system. Please have UW Sheet Metal close up the gap.

			62 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues on the Mixing Air damper motors.	The mixed air dampers do not track the Return and Exhaust air dampers correctly. The damper motors need to be mounted correctly. The dampers
						themselves appear to bind also and may affect the DDC interface.
			63 2022 Action Item	UW Sheet Metal Shop	Mixed air dampers not closing due to physical restrictions	This unit has one mixed air dampers. The damper is concealed inside of the ductwork along with their associated damper motors. It appears the damper does not close all the way. I speculate they are physically binding or not capable of functioning with the current damper motors that are installed.
			64 2022 Action Item	UW Sheet Metal Shop	Install Access Door for service and repair.	Current access doors are in the wrong location for the mixing dampers. I would like the Sheet Metal Shop to install access doors to both service and inspect the dampers and their motors. DDC can then calibrate the damper motors and get the system working correctly.
# Exhaust Fan 10	E - 10	UW Asset Number 112200	UW PM Number 0554-043			
Detailed Summary	This unit may have	a bad lower fan bearing.	owever, this fan has the capab s tracking AND they are noted			out of the building, unlike the other return fan for the unit, $E$ - 3.
			65 2022 Action Item	UW Machine Shop	The lower bearing on the blower is making a rumbling noise.	This unit has an intermittent rumbling. It is as if the lower bearing is going out and needs replacement. This will be difficult because the unit is big, heavy and hung close to the ceiling and will need to be disconnected and dropped to be serviced.
			66 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues on the Mixing Air damper motors.	The mixed air dampers do not track the Return and Exhaust air dampers correctly. The damper motors need to be mounted correctly. The dampers themselves appear to bind also and may affect the DDC interface.
			67 2022 Action Item	UW Sheet Metal Shop	Mixed air dampers not closing due to physical restrictions	This unit has one mixed air dampers. The damper is concealed inside of the ductwork along with their associated damper motors. It appears the damper does not close all the way. I speculate they are physically binding or not capable of functioning with the current damper motors that are installed.
			68 2022 Action Item	UW Sheet Metal Shop	Install Access Door for service and repair.	Current access doors are in the wrong location for the mixing dampers. I would like the Sheet Metal Shop to install access doors to both service and inspect the dampers and their motors. DDC can then calibrate the damper motors and get the system working correctly.
# Exhaust Fan 11	E - 11	UW Asset Number 112200	UW PM Number 0554-038			
Detailed Summary	This unit was discove	red on and running. There a		e damper motors and dampe	ers and will probably require more access doors t	out of the building, unlike the other return fan for the unit, $E$ - 6. o properly service the issues.
			69 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues on the Mixing Air damper motors.	The mixed air dampers do not track the Return and Exhaust air dampers correctly. The damper motors need to be mounted correctly. The dampers themselves appear to bind also and may affect the DDC interface.
			70 2022 Action Item	UW Sheet Metal Shop	Mixed air dampers not closing due to physical restrictions	This unit has one mixed air dampers. The damper is concealed inside of the ductwork along with their associated damper motors. It appears the damper does not close all the way. I speculate they are physically binding or not capable of functioning with the current damper motors that are installed.
			71 2022 Action Item	UW Sheet Metal Shop	Install Access Door for service and repair.	Current access doors are in the wrong location for the mixing dampers. I would like the Sheet Metal Shop to instal access doors to both service and inspect the dampers and their motors. DDC can then calibrate the damper

motors and get the system working correctly.

# Exhaust Fan 12	E - 12	UW Asset Number 112200	UW PM Number 0554-037			
Detailed Summary	This unit was discov	vered on and running. There a		ge damper motors and dampe	ers and will probably require more access doors	t out of the building, unlike the other return fan for the unit, E - 7. to properly service the issues.
			72 2022 Action Item	UW Digital Controls	Pneumatic damper motor issues on the Mixing Air damper motors.	The mixed air dampers do not track the Return and Exhaust air dampers correctly. The damper motors need to be mounted correctly. The dampers themselves appear to bind also and may affect the DDC interface.
			73 2022 Action Item	UW Sheet Metal Shop	Mixed air dampers not closing due to physical restrictions	This unit has one mixed air dampers. The damper is concealed inside of the ductwork along with their associated damper motors. It appears the damper does not close all the way. I speculate they are physically binding or not capable of functioning with the current damper motors that are installed.
			74 2022 Action Item	UW Sheet Metal Shop	Install Access Door for service and repair.	Current access doors are in the wrong location for the mixing dampers. I would like the Sheet Metal Shop to install access doors to both service and inspect the dampers and their motors. DDC can then calibrate the damper motors and get the system working correctly.
# Exhaust Fan 13	E - 13	UW Asset Number 112200	UW PM Number 0554-035			
Detailed Summary			s the air to either the 5th floor rs tracking AND they are noted		outdoor air intake plenum of AHU S - 9. n AHU S - 9.	
			75 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
			76 2022 Action Item	UW Sheet Metal Shop	Loose internal insulation	When the unit is on, there is some insulation on the inside of the Western wall of the discharge ductwork that "flops" in the airstream. It should be repaired.
# Exhaust Fan 14	E - 14	UW Asset Number 112210	UW PM Number 0554-040			
Detailed Summary			ns the air to either the 5th floor are issues with its pneumatic d		outdoor air intake plenum of AHU S - 10. HU S - 10.	
			77 2022 Action Item	UW Safety UW Maintenance UW Sheet Metal Shop	Bearing Exposure and Excessive grease on bearings and floor	The blower bearings are exposed and could hurt someone if were to accidently put their hand on it. The UW should consider putting a protective cap over the outside of them to prevent harm and contain the grease.
# Exhaust Fan 15	E - 15	UW Asset Number 112200	UW PM Number 0554-041			
Detailed Summary	This unit was discov	- Motor is not running. Don't vered not running. Since it wa otor Manufactures tag on the r		, we depressed the reset on extremely limited.	the starter and it did not restart.	
			78 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
			79 2022 Action Item	UW Electric Shop	This unit was discovered not running.	Please get this unit up and running and check the current draw for safe

						operating conditions.
# Exhaust Fan 16	E - 16	UW Asset Number 120470	UW PM Number 0554-042			
Detailed Summary		Spray Room Exhaust on the original covered not running. Since it was i		, we depressed the reset on	the starter and it restarted.	
			80 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
# Exhaust Fan 17	E - 17	UW Asset Number NO ASSET NUMBER	UW PM Number 0554-036			
Detailed Summary		the Western half of the buildings to ad on and appears to be operating.	ilet exhaust systems. Serve	s TR ex 126		
			81 2022 Action Item	UW Asset Management	No Asset Number	This unit did NOT have a UW ASSET NUMBER STICKER.
# Exhaust Fan 18	E - 18	UW Asset Number NO ASSET NUMBER	UW PM Number 0554-039			
Detailed Summary	It serves the toile	scovered not running. Since it was i et exhaust fan in the North East cor or jumps around a lot as it runs and 32	rner of the building. The mote	or is located in the 5th floor F	Penthouse.	
			82 2022 Action Item	UW Asset Management	No Asset Number	This unit did NOT have a UW ASSET NUMBER STICKER.
			83 2022 Action Item	UW Electric Shop	This unit was discovered not running.	Please check the current draw for safe operating conditions.
			84 2022 Action Item	UW Machine Shop	The mounting of the electric motor is poor.	It serves the toilet exhaust fan in the North East corner of the building. The motor is located in the 5th floor Penthouse. The electric motor jumps around a lot as it runs and after it was running for one day, it was so hot you couldn't touch it.
			85 2022 Action Item	UW Maintenance	Excessive grease on bearings and floor	The "gobs of grease" on the bearing housings are spraying and dripping onto the floor. When anyone is walking through the Penthouse and four lower mechanical rooms, it is easily stepped in and carried onto the museums beautiful wood floors. PLEASE CLEAN IT UP.
# Transfer Fan # 1	TF - 1	UW Asset Number This Unit Needs an Asset Number	UW PM Number r 0554-018A	UW Electric Shop	This unit was discovered not running.	
Detailed Summary	It acts as a trans	scovered not running. Since it was i sfer fan for AHU - 1 for the 5th floor from AHU-3 across the face of the	atrium. The motor is located	d in the 5th floor Penthouse of	witch with a heater in it and it did not restart. In the North end of the room.	
			86 2022 Action Item	UW Electric Shop	This unit was discovered not running.	Please get this unit up and running and check the current draw for safe operating conditions.

Date	5/4/2022		
Work Order #	0108	l	
Building #	0544		
Action Item	General Summary of the	2022 Elvehjem Arts Building	
People involved	Patrick McGowen	Patrick McGowan Inc President / Architect McGowan Architecture 4414 Regent Street, Suite 205 Madison, WI 53705	1-608-235-2751
	Michael J. Wimmer, P.E.	Henneman Engineering	1-608-577-2871
	Jim Zerda	Henneman Engineering 1232 Fourier Drive, Suite 101 Madison, WI 53717-1960	1-608-833-7000
	Scott Utter	Architect / Project Manager University of Wisconsin - Facilities 21 North Park Street, Suite 6101 Madison, WI 53715	1-608-286-8130 Planning and Management
	Adam Hutchinson	Elvehjem Arts Center Building Man	ager 1-608-558-4411
	Graham Linn, PE, LEED	BD+C Outside Consultant	1-608-447-8108 www.hablab.llc

### 4/18/2022

All of the above meet at all of the above met at the Elvehjem main lobby and had a brief discussion regarding the project. We all then moved to the main equipment room and investigate the equipment and discussed the situation and basic scope of work. I informed them the equipment room was the discharge plenum for the "systems relief". I knew this because I investigated, extensively, the building next door's building pressure issue and ALL the equipment associated, the "Humanities Building".

A quick walk-through discovered a great many things with just general maintenance items. On 4/19/2022 I went through my notes reporting back and created a quick spread-sheet of the items I should be investigating, documenting and reporting back to Henneman Engineer.

The primary issues is a global one. It is designed for a huge constant volume system for 1968. There are no air flow measuring stations. There is no way to mechanically relieve the building pressure "directly". All the exhaust from the supply fans is "pushed into the mechanical rooms" and "not out the building".

There is also no "building pressure sensor". It is all done with the AHU dampers and output signals from the JCI DDC Controls

There may be one located in the building pressure relief duct on the South West corner of the 6th floor mechanical room just below the roofline.

I put a spread sheet together to quickly capture damper motor issues, rotted unit housings, rotted out coil issues (and ones that have had repairs or replacements) and along with other maintenance issues. A lack of air flow measuring stations or possible mismatch of CFM during normal operations should also be noted.

It was also discovered that the 6th floor mechanical rooms extend down to the first level in the four corners of the building. This means that the "pressurized" mechanical rooms are "pressurized" from the second floor to the sixth floor of the building. I am still advocating for there to be Mechanical "depressurization of the equipment rooms and it may be the best solution to "relieve" the building pressure.

S - 3 (Solved)

This unit has a problem. It has a leaking steam trap to the mechanical room blowing steam. Should be fixed ASAP to avoidexcessive moisture being present in the building. Maintenance Mechanic should be contacted and alerted that it is hisresponsibility to report and have those repaired. Discovered a "steam leak" on S-3. I took a picture of it and sent it over to Ed Corcorain to get fixed on maintenance.

- 4/21/2022 Met for 2 1/2 hours with Jim and Mike with Henneman. I had to leave early because I had class at 4:30 pm. We looked at S-5 and took some readings.
- 4/22/2022 I worked from 8:00 am to 4:30 pm.

I went there alone. I finished up with S-5 and E-1. While there I measured E-2. in the second floor equipment room. I then went on to the other S-Units that we did not have any data on. S-5, S-6, S-7, S-8, S-9, and S-10 I was able to obtain the data on S-9 and it's return / exhaust fan, E-13, but my computer locked up. I then called Mike and discussed the days readings, progress and scope. He stated he wanted pressure drops on all the booster coils if possible.

### I checked the fans with counter clock wise rotation and discovered they all need to rotate clockwise.

- 5/4/2022 Worked on completing the report and creating a punch list everyone can follow. I also reorganized the layout of the Unit Profile sheet to represent the four lower equipment rooms better.
- 5/6/2022 Patrick informed me he will be out of the office for the next two weeks. Contact his boss if needed.

5/9/2022 Completed the summary sheet and editing the preliminary findings sheet.

### 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on 6\_22\_2022 Summary

### Equipment Summary

Buildina	Survey	of the	Elvehiem	Arts Building	

System

Name

Fan Data

Fan

Model #

Fan

Manufacturer

Date: 5/4/2022

ABC Unit Number

Blue Background	- Data from Field reports
Light Green	- As Found Data
Auburn Background	- Basic Comments
Red Background	- Requires attention to complete the project
Note: This sheet was created for a HP 895C printer	and it is recommended that you change the print option to BLACK AND WHITE ONLY to conserve yo

Please note the format of this summary sheet varies from facility to facility and needs to be modified and corrected for each and every application and they Motor Data RPM Nameplate Motor Frame Volts Full Load Motor Fan Actual Motor Service Total Supply or System Horse Efficiency Power Sheave Sheave Center to Factor Exhaust CFM Total Amps Power Diameter Diameter Center Factor SP

	0544 - 019B	AHU - 1	Trane	CCDB08BAE0K	2.0	100%	S182T	1745	460	3.9	4.75	6.8	18	1.0	1.15	4,200	2.00
	Unknown	AHU - 2	Trane	CCDBD8AEOK	3.0	86%	S182T	1745	460	3.9	4.75	7.75	18.5	Air	1.15	4,200	2.00
	0544 - 021A	AHU - 3	Trane	CCDB068UUK	2.0	85%	S182T	1745	460	2.6	3.3	4.1	15	1.0	1.15	2,000	1.00
	0544 - 019A	AHU - 4	Trane	CCDB068UUK	3.0	86%	S182T	1745	460	2.6	5.4	3.9	15	1.0	1.15	1,900	3.75
	0544 - 023	AHU S-1	Trane	NA	10	92%	215T	1760	460	12.9	6	7	25	1.0	1.15	11,000	3.00
	0544 - 022	AHU S-2	Trane	M - 25	15	100%	254T	1765	460	17.7	7.9	7.4	26	1.0	1.15	11,000	3.00
	0544 - 018	AHU S-3	Trane	M - 25	10	92%	215T	1760	460	12.9	6.5	7.25	25	1.0	1.15	11,000	3.00
Г	0544 - 017	AHU S-4	Trane	M - 25	10	92%	215T	1760	460	12.9	6	7	25	1.0	1.15	12,000	3.25
	0544 - 014	AHU S-5	Trane	M - 21	7.5	100%	213T	1760	460	10	11.9	9.9	18	1.0	1.15	10,400	2.20
	0544 - 015	AHU S-6	Trane	M - 21	7.5	91%	213T	1760	460	10	5.5	9.9	18	1.0	1.15	9,325	1.00
	0544 - 020	AHU S-7	Trane	M - 21	7.5	91%	213T	1760	460	10	6.9	6.5	22.5	1.0	1.15	9,700	1.00
	0544 - 019	AHU S-8	Trane	M - 14	5	90%	184T	1750	460	6.5	5.9	7.9	24	1.0	1.15	5,725	1.00
Г	0544 - 016	AHU S-9	Trane	M -21	10	82%	215T	1780	460	12.9	5.9	5.9	26	1.0	1.15	10,800	1.95
Г	0544 - 016	AHU S-10	Trane	M - 17	7.5	91%	184	1775	460	10.3	6.9	6	21	1.0	1.15	7,600	2.22
Γ																	
		V-1															
	NA	E - 1	Dreyer Dynamics	T.C.2	2.00	87%	145T	1735	460	2.9	3.7	11.8	85.0	0.8	1.15	8,400	0.00
	NA	E - 2	Dreyer Dynamics	240	1.00	88%	143T	1765	460	1.5	3.3	8.6	64.0	0.7	0.71	4,300	0.00
	NA	E - 3	Dreyer Dynamics	300	1.50	85%	145T	1745	460	2.5	3.4	9.4	26.5	1.0	1.00	6,550	0.00
	NA	E - 4	Dreyer Dynamics	T.C. 2	7.50	91%	213T	1770	460	9.7	6.0	11.8	32.1	1.0	1.15	8,400	0.00
	NA	E - 5	Dreyer Dynamics	T.C. 2	1.50	87%	145T	1740	460	2.1	3.2	8.4	25.5	1.0	1.15	5,550	0.00
	NA	E - 6	Dreyer Dynamics	T.C. 2	1.00	83%	N143T	1745	460	1.35	3.7	8.9	25.5	1.0	1.15	4,900	0.00
	0544010	E - 7	Dreyer Dynamics	T.C 2	1.00	80%	143T	1730	440	1.8	3.8	8.5	23.0	1.0	1.15	4,000	0.80
	0544009	E - 8	NA	T.C 2	2.00	100%	145T	1725	460	2.7	3.4	11.9	29.0	1.0	1.15	7,650	0.00
	0544-045	E - 9	Dreyer Dynamics	T.C 2	1.00	100%	143T	1725	460	1.4	3.1	11.0	27.0	1.0	1.15	5,600	0.80
	0544-043	E - 10	Dreyer Dynamics	T.C 2	0.75	100%	56	1725	460	1.5	3.3	9.8	20.5	1.0	1.15	3,300	0.55
	0544-038	E - 11	Dreyer Dynamics	T.C 2	1.00	100%	145T	1750	460	1.4	3.9	9.6	25.0	1.0	1.15	4,800	0.80
	0544-037	E - 12	Dreyer Dynamics	T.C 2	1.00	100%	143T	1740	460	1.4	3.1	12.4	28.8	1.0	1.15	6,800	0.80
	0544-035	E - 13	Dryer Dynamics Corp	T.C 2	3.00	90%	182T	1755	460	4.0	3.1	10.5	31.0	0.8	1.15	10,100	1.04
	0544-040	E - 14	Dryer Dynamics Corp	T.C 2	1.50	87%	145T	1740	460	2.1	3.5	12.3	31.0	1.0	1.15	7,000	0.69
Γ	0544-041	E - 15	Dryer Dynamics Corp	T.C 2	1.50	87%	NO TAG	1750	460	2.1	4.1	3.4	13.0	1.0	1.15	600	0.00
	0544-042	E - 16	Dryer Dynamics	T.C. 2	0.33	87%	J56	1725	115	6.6	4.1	4.7	14.0	1.0	1.0	600	0.45
Γ	0544-036	E - 17	Dryer DYNAMICS CORF	BI FLO	0.50	87%	F56	1725	440	2.2	3.1	3.1	31.0	1.0	1.25	1,800	0.65
	0544-039	E - 18	Dryer	T.C. 2	0.50	87%	LA 56	1725	460	1.5	43	4.0	14.5	1.0	1.25	1,300	-1.29
Γ	0544 - 018A	TF - 1			0.75				120							5,000	0.25
Γ																	

Please note the format of this summary sheet varies from facility to facility and needs to be modified and corrected for each and every application and they are not always accurate!

Total Minimum Outside Air = Total Maximum Outside Air when c Total Minimum Exhaust Air=

Total Maximum Exhaust Air =

Difference from Min. Outside Air to

Difference from Max. Outside Air t

1

2

5/4/2022

These Minimum values need to be calculated. It shows S-1 min oa is NEGATIVE in it's design! Please note the Fields in Column AK, Total Supply or Exhaust CFM, that are This false data was entered because the spread sheet disp If the reader assumes the 1991 air values are unchanger

ur ink jet toner cartridge. are not always accurate!

are not always a		n Data				1				19	91 Reported As Fou	nd Information				
Fan	Design	Design	Calculated Desigr	Design	Design	Fan	Total Supply or	Return Air	Outside Air	Fan	Actual	Amp	Assumed	System Total	"Interpreted" Brake	Standard Brake
RPM	Return	Max	Minimum	Min. Exh.	Max Exh	Name	Exhaust CFM	CFM	CFM	RPM	Volts	Draw	Power	Static	Horsepower	Horsepower
	CFM	OA CFM	OA CFM	CFM	CFM								Factor	Pressure	Calculation	Calculation
928	4,175	4,200	25	25		AHU - 1	4,589	4,500	89	948	453	3.4	1.0	1.75	1.07	16.97
900	4,200	4,200	0	0		AHU - 2	4,514	4,514	0	905	453	3.0	1.0	1.54	1.53	12.80
1325	1,800	2,000	200	200		AHU - 3	2,158	2,158	0	981	453	1.1	1.0	0.70	1.11	0.83
2709	200	1,900	1,700	1,700		AHU - 4	1,950	212	1,735	2,571	453	2.6	1.0	2.20	4.35	2.95
1630	9,900	11,000	1,100	1,100		AHU S-1	10,353	6,983	10,353	1,558	453	9.6	1.0	2.72	8.72	7.33
1630	9,900	11,000	1,150	1,150		AHU S-2	9,927	0	9,927	1,771	453	13.7	1.0	3.45	14.82	11.43
1755	9,900	11,000	1,300	1,300		AHU S-3	10,266	254	10,266	1,771	453	12.0	1.0	3.40	9.91	9.16
1755	9,900	12,000	1,200	1,200		AHU S-4	10,165	2,857	10,165	1,859	453	13.9	1.0	3.23	10.40	10.61
1250	1,000	10,400	2,000	2,000		AHU S-5	0	0	0	1,247	453	6.8	1.0	1.50	5.23	5.02
901	7,650	9,325	1,675	1,675		AHU S-6	0	0	0	811	459	6.2	1.0	1.15	3.45	4.64
911	8,400	9,700	1,300	1,300		AHU S-7	0	0	0	802	458	6.4	1.0	1.11	3.40	4.78
925	5,550	5,725	175	175		AHU S-8	0	0	0	912	459	4.9	1.0	1.07	2.60	3.76
1025	10,100	10,800	700	700		AHU S-9	0	0	0	1,001	458	10.2	1.0	1.56	5.60	7.87
880	7,000	7,600	600	600		AHU S-10	0	0	0	744	459	9.3	1.0	1.63	3.14	6.76
						1										
500			+		8,400	E - 1	6,087			488	484	2.8	1.0	0.78	0.59	2.03
660	-	-	-		4,300	E - 1 E - 2	2,844	-		756	484	1.6	1.0	0.96	0.45	1.14
555	-	-	-		6,550	E - 2 E - 3	3,413	-		546	484	2.4	1.0	0.96	0.45	1.14
500	-		-		8,400	E - 3	6,763	-		836	484	8.4	1.0	2.90	3.65	6.69
608	-	-	-		5,550	E - 4	4,043	-		546	474	2.1	1.0	0.89	0.49	1.52
585	-		-		4,900	E-6	1,133	-		836	475	1.9	1.0	0.82	0.49	1.43
645	-	-	-		4,000	E - 7	3,403	-		717	484	1.9	1.0	1.09	0.46	1.45
508	-	-	-		7,650	E - 8	4,314	-		478	484	2.2	1.0	0.85	0.58	1.69
452	-	-	-		5,600	E - 9	4,139	-		486	484	0.9	1.0	0.39	0.30	0.70
620	-	-	-		3,300	E - 10	2,657	-		1189	484	0.9	1.0	0.33	0.54	0.48
512	-	-	-		4,800	E - 11	3,253	-		676	484	1.4	1.0	0.63	0.41	1.05
405	-	-	-		6,800	E - 12	3,905	-		388	484	1.4	1.0	0.61	0.23	1.05
472	-	-	-		10,100	E - 13	5,726	-	l	472	482	3.5	1.0	1.04	0.85	2.75
441	-	-	-		7,000	E - 14	4,263	-	l	441	484	1.9	1.0	0.69	0.40	1.45
0	-	-	-		600	E - 15	0	-		0	484	0.0	1.0	0.00	#DIV/0!	-
1541	-	-	-		600	E - 16	0	-		1541	484	6.5	1.0	0.45	1.25	-
1200	-	-	-		1,800	E - 17	1,484	-		1200	484	1.0	1.0	0.65	0.38	0.25
1750	-	-	-		1,300	E - 18	1,304	-		1750	484	1.0	1.0	-1.29	0.53	0.35
630					5,000	TF - 1	0									
·			+				4				+					L
					13,125		Total Economizer Outs	ide Air -				I		I	1	42,535
n 100% Econom	izor -				110,850		Total AHU Relief Air a									
m 100% Econom	1201 -															58,731
					13,725		Difference from the To	tai Economizer Out	side Air intake and ti	ne AHU Relief Air a	and the Tollet Exhaus	st air volumes =				-16,196
					96,650											
) Exhaust =					-600		Please note the format	of this summary sh	eet varies from facil	ity to facility and ne	eeds to be modified	and corrected for ea	ach and every a	application and the	y are not always acc	
o Exhaust when a	all equipment is a	at 100% Econo	mizing =		14,200	1										

### lacking a background color are from the 2022 Survey and all other data is from the 1991 Survey played synext errors if there wasn't a value prior to the survey being performed. d, then the gross summary of the air volumes of the facility is fairly accurate.

				2022 ABCMW	,							Calculated	Current	Current	Calculated
otal Supply or xhaust CFM	Return Air CFM	Outside Air CFM	Fan RPM	Actual Volts	Amp Draw	Assumed Power Factor	System Total Static Pressure	Interpreted Brake Horsepower Calculation	Standard Brake Horsepower Calculation	Fan Name	Design CFM	Max Airflow from interpreted BHP As Left / Max	Draw required for design CFM	Draw available on motor	Horsepow Req.for Max
4,628	4,628	0	919	453	3.4	0.9	1.51	1.04	16.97	AHU - 1	4,200	5,760	1.32	3.9	0.7
5,400	5,400	0	893	484	3.8	86.5	1.45	1.62	16.21	AHU - 2	4,200	6,637	0.96	3.9	0.7
1,642	1,642	0	964	484	1.1	0.9	0.87	1.16	0.89	AHU - 3	2,000	2,150	1.99	2.6	1.5
2,012	1,977	24	2,614	484	2.2	0.9	1.59	4.73	2.67	AHU - 4	1,900	2,091	1.85	2.6	2.1
8,889	7,591	8,889	1,541	483	8.1	0.9	2.63	9.19	6.57	AHU S-1	11,000	10,227	15.29	12.9	11.8
13,380	6,048	13,380	2,014	484	15.4	0.9	4.80	18.01	13.70	AHU S-2	11,000	13,790	8.54	17.7	7.2
11,060	254	11,060	1,746	484 484	12.0 9.0	77.2 77.2	3.50 3.87	10.44 11.18	9.79	AHU S-3	11,000	11,139	11.81	12.9 12.9	9.2 18.8
10,102 7.613	NA 0	NA 7.613	1,870 1.621	484 453	9.0	1.0	2.37	6.80	7.34 5.79	AHU S-4 AHU S-5	12,000 10.400	11,199 8.301	24.19 19.97	12.9	18.8
10,067	0	10.067	1,021	453	6.2	79.0	2.37	7.28	4.64	AHU S-5 AHU S-6	9,325	11,815	4.93	10	3.7
9,673	0	9,673	1,803	433	7.8	0.8	2.69	8.08	6.18	AHU S-7	9,700	10,317	7.90	10	5.9
5,014	0	5,014	1,275	484	5.6	0.8	2.33	3.83	4.51	AHU S-8	5,725	5,191	8.29	6.5	6.4
9,013	0	9,013	1,775	483	10.5	0.8	3.00	10.47	8.57	AHU S-9	10.800	9,488	18.12	12.9	14.0
8,057	0	8,057	2052	484	9.6	0.8	2.91	9.12	7.36	AHU S-10	7,600	8,110	8.06	10.3	5.9
-,	-	-,									.,	-,			
5.000			100	10.1		1.0	0.70	0.50	0.00		0.100	0.000	0.00		
5,989	-		488 756	484 484	2.8	1.0	0.78	0.59	2.03	E - 1 E - 2	8400 4300	8,989 3.698	2.28	2.9	1.6
2,835 3,194	-		546	484 484	1.6 2.4	1.0	0.96	0.45	1.14	E-2 E-3	4300 6,550	4,626	6.81	2.5	1.7 4.1
6,760	-		836	404 474	8.4	1.0	2.90	3.65	6.69	E - 3 E - 4	8,400	4,626	7.84	9.7	6.1
3,925	-		546	474	2.1	1.0	0.89	0.49	1.52	E-4 E-5	5,550	5,714	1.89	2.1	1.4
2.374	-		836	475	1.9	1.0	0.82	0.49	1.43	E-6	4,900	3.001	8.12	1.35	6.0
3,495	-		717	484	1.9	1.0	1.09	0.46	1.18	E - 7	4,000	4,541	1.32	1.8	0.7
4,253	-		478	484	2.2	1.0	0.85	0.58	1.69	E - 8	7,650	6,414	3.68	2.7	2.7
4,757	-		486	484	0.9	1.0	0.39	0.30	0.70	E - 9	5,600	7,134	0.45	1.4	0.3
2,854	-		1189	484	0.9	1.0	0.33	0.54	0.48	E - 10	3,300	3,176	1.03	1.5	0.5
3,797	-		676	484	1.4	1.0	0.63	0.41	1.05	E - 11	4,800	5,125	1.15	1.4	0.8
4,783	-		388	484	1.4	1.0	0.61	0.23	1.05	E - 12	6,800	7,756	0.94	1.4	0.7
5,760	-		472	482	3.5	1.0	1.04	0.85	2.75	E - 13	10,100	8,786	5.32	4	4.0
4,457	-		441	484	1.9	1.0	0.69	0.40	1.45	E - 14	7,000	6,924	2.00	2.1	1.4
0	-	-	0	484	0.0	1.0	0.00	#DIV/0!	0.00	E - 15	600	#DIV/0!	#DIV/0!	2.1	#DIV/
462	-	-	1541	484	6.5	1.0	0.45	1.25	1.38	E - 16	600	297	53.44	6.6	2.7
1,725	-		1200	484	1.0	1.0	0.65	0.38	0.25	E - 17	1,800	1,886	0.87	2.2	0.2
1,299	-		1750	484	1.0	1.0	-1.29	0.53	0.35	E - 18 TF - 1	1,300 5.000	1,271	1.07	1.5	0.4 #VALU
4,200					0.0	1.0				11-1	5,000	#VALUE!	#VALUE!		#VALU
l Economizer Ou	utside Air =			1	1	1		1	82,790			1			1
	and Toilet Exhaus	st -							66,918						
rence from the T	otal Economizer	Outside Air intake an	d the AHU Relief A	ir and the Toilet Exh	aust air volumes =				15,872						

Please note the format of this summary sheet varies from facility to facility and needs to be modified and corrected for each and every application and they are not always accura

Desired Driven	Desired new		
Sheave Dia based on	Belt Length based	Ī	
Max Airflow	on Max Airflow		Additional
From interpreted BHP	From Inter BHP		Comments
		Existing Motor	
-			
6.5	54.2	2.0	Serves the perimeter skylights, The unit is shown moving too much air volume in the 1990 air balance survey.
7.5	56.7	3.0	Serves the perimeter skylights, The unit is shown moving too much air volume in the 1990 air balance survey.
3.5	41.6	2.0	Serves the Paige Court skylights. Goofy linkage between the OA and RA damper motors.
5.9	44.6	3.0	Serves the Meyer Print Center
5.6	70.4	10.0	Serves 3+4 South and West
9.9	76.0	15.0	Serves 1,2,3 +4 South and East
6.6	71.6		Serves 1,2+3 North
5.6	70.4	10.0	Serves 3+4 North
9.5	70.3	7.5	Serves 1+2 North
7.0	60.4	7.5	Serves 1+2 West
7.3	66.0	7.5	Serves 1+2 South and North
5.3	69.7	5.0	Serves 160
5.2	70.5	10.0	Serves L130, L140 + L150
7.4	62.3	7.5	Serves L160
4.0	194.5	2.0	Serves AHU S-5 Return / Exhaust Air
2.8	146.8		Serves AHU S-1 Return / Exhaust Air
2.4	73.4	1.5	Serves AHU S-2 Return / Exhaust Air
6.1	92.5	7.5	Serves AHU S-7 Return / Exhaust Air
3.3	69.5		Serves AHU S-8 Return / Exhaust Air
2.3	71.0	1.0	Serves AHU S-3 Return / Exhaust Air
4.3	65.6	1.0	Serves AHU S-4 Return / Exhaust Air
2.9	82.6	2.0	Serves AHU S-6 Return / Exhaust Air
3.9	76.7		Serves AHU S-1 Return / Exhaust Air
3.2	62.1		Serves AHU S-2 Return / Exhaust Air
4.2	71.5	1.0	Serves AHU S-3 Return / Exhaust Air
3.5	82.6	1.0	Serves AHU S-4 Return / Exhaust Air
2.7	83.8	3.0	Serves AHU S-9 Return / Exhaust Air
3.5	87.4	1.5	Serves AHU S-10 Return / Exhaust Air
#DIV/0!	37.8	1.5	Serves Kitchen 371 - Motor is not running. Don't know why. I had to enter in false data to eliminate the error codes in the calculations sheet.
2.0	41.8	0.3	Serves Shop 101
3.2	71.7	0.5	Serves TR ex 126
42.0	129.0	0.5	Serves TR ex 162
#VALUE!	#VALUE!	0.8	Transfers the air from AHU-3 across the face of the skylights in the center of the building. I had to enter in false data to eliminate the error codes in the calculaitons sheet.

5/4/2022		Elvehjem Arts Building					
	Other	Main Body of the Air Handling Units	Cooling Coil	Heating Coil	ſ	Filter Rack	Single Damper
	Units Associated		Coil Face Coil Control Condensate pan	Control	-		Common Tracking Outside Air Damper and Motor Informat
	with these Units	(To Blowers, CHW, Dess under under an are original or Electric Blower Temp of the Sheaves have a	Flow is appear Valve the Cooling Coil As found discolored appear Valve ok/repaired / Pressure Green repaired Issues ok/repaired / Pressure	Face Valve Visual Leaks As found Differential By-pass issues Difference Pressure		Number Size Number Size Type MERV.Rating As found Differential	AF/AL electric without pilot or needs calibrated Damper
AHU-1			iepiaceu		AHU-1	All the fallers on all the units looked great. Fairly new faller racks and a mammum of MERV 10 on all	
	V - 1	initialized leakane ("proceeding of the state of the stat				unix All the fallers on all the units looked great. Fairly new faller racks and a manmum of MERV 10 on all	
AHU-2 AHU-3		installed leakane ("processor of the same	one Good Shape NO None OK 0.3058		AHU-2 AHU-3	mix All the lalers on all the units looked great. Fairly new filter racks and a manimum of MERV 10 on all	None None DNE DNE DNE
AHU-4		installed leakane repairs participants international international contractions in the second				mix All the lalers on all the units looked great. Fairly new filter racks and a manimum of MERV 10 on all	YES None DNE DNE DNE
AHU-4 AHU S-1		installed leakane ("processor of the same	one Good Shape NO None OK 0.2734		AHU-4 AHU S-1	unix All the fallers on all the units looked great. Fairly new faller racks and a manmum of MERV 10 on all	YES NONE PREUMATIC NONE UNKNOWN 8" ROUND
AHU 5-1	E-2 & E-9	Non-factory Doom None for Unit Appear Upgrade Super-E 91.7% 130 F Appear "OK" Blut Exposed Lindeled	one New in 1991 NO None Should have one 0.2930		AHU S-1	unix All the fallers on all the units looked great. Fairly new faller racks and a manmum of MERV 10 on all	YES YES PNEUMATIC WITH PILOT CALIBRATION NA
AHU S-2	E-3 & E-10	Non-factory Doors None for Unit leakage Appear Upgrade Super-E 93% 130 F Appear 'OK' Shaft Exposed	one New in 1991 NO None Should have one 0.5780		AHU S-2	All the fallers on all the units looked great. Fairly new faller racks and a manimum of MERV 10 on all	YES YES PNEUMATIC WITH PILOT NEEDS NA
		Non-factory Doors Taken Excercise Island		NO None None NA		unix All the fallers on all the units looked great. Fairly new faller racks and a manmum of MERV 10 on all	
AHU S-3	E-6 & E-11	Non-factory Doors Under Expansion Joint Appear Upgrade Super-E 91.7% 130 F Appear 'OK' Bhuft Exposed	one New in 1991 NO None One on Expansion 0.3950		AHU S-3	unix All the fallers on all the units looked great. Fairly new faller racks and a manmum of MERV 10 on all	YES YES PREUMATIC WITH PILOT CAUBBATION NA
AHU S-4	E-7 & E-12	Non-factory Doors increation         Under Expansion Joint         Appear Upgrade         Super-E 91.7%         120 F         Appear 'OK'         Shaft Exposed	one New in 1991 NO None One on Expansion 0.0500		AHU S-4	mits All the falters on all the units looked areal. Fairly new falter racks and a minimum of MERV 10 on all	YES PNEUMATIC WITH PILOT CALIBRATION NA
		Non-Sactory Doors None for the Indoors Association Courses C 01% 120 E Associative Courses		NO None None NA		All the fallers on all the units looked ereal. Fairly new faller racks and a minimum of MERV 10 on all	VER VER PREFIMATION WITHOUT NEEDS NA
AHU S-5	E-1	installant more or universegre proper opgene Goupone 2177 1201 Popper On Disectopose	one Green- YES NONE Should have one 0.3188		AHU S-5	All the fallers on all the units looked ereal. Fairly new faller racks and a minimum of MERV 10 on all	
AHU S-6	E-8	installant more or universegre popular opgenie Souperie 2172 Taur Popular On Dealer Laponeo	one Green- Buttion YES NONE Should have one 0.4400		AHU S-6	All the fallers on all the units looked areal. Fairly new faller racks and a minimum of MERV 10 on all	TEO PROMINIO PROTE CALIBRATION IN
AHU S-7	E-4	Non-Rectory Doors None for Unit leakage Appear Upgrade Super-E 91% 130 Loose Shaft Exposed	one Green- Buttion YES None Should have one 0.4388		AHU S-7	All the fallers on all the units looked areal. Fairly new faller racks and a minimum of MERV 10 on all	TEO PROMINIO PROTE CALIBRATION IN
AHU S-8	E - 5	Non-factory Doors None for Unit leakage Appear Upgrade Super-E 89.5% 130 Appear 'OK' Shaft Exposed	one Green- Rotting YES None Should have one 0.3000		AHU S-8	All the fallers on all the units looked ereal. Partly new faller racks and a mammum of MERV III on all	YES YES PNEUMATIC WITHOUT NEEDS NA
AHU S-9	E-13		one Green- Rotting YES None Should have one 0.4833		AHU S-9	All the fallers on all the units looked ereal. Partly new faller racks and a mammum of MERV III on all	YES YES PNEUMATIC WITHOUT NEEDS NA
AHU S-10	E - 14 ELIEF DAMPER -	Non-factory Doors         None for Unit leakage         Appear Upgrade         Super-E 91%         130         Loose         Shaft Exposed           Didn't not ampling	one Green- Rotting YES None Should have one 0.4441	NO None NA A	AHU S-10	The me mension an me units noticed great. Fairly new rate racks and a manimum of MERCV 10 on an units.	YES YES PNEUMATIC WITHOUT NEEDS NA
SOL BUILDING R	TH WEST ELIEF DAMPER - TH EAST	Brould have some Leader Toole anything. Should have some			Relief		
NOF	ELIEF DAMPER - TH WEST ELIEF DAMPER -	Didn't nois airphong Bhadd have some Didn't nois airphong Bhadd have some			Relief		
SOL E-1	AHU S -5		Didn't note anything	ſ	E-1		
E-2	AHU S - 1		Didn't note anything	-	E-2		
Б3	AHUS-2	Didn't note anything Didn't note anything Lower Feb. REALLY OLD NA Not an issue		-	E-3		
E4	AHU S - 7		Didn't note anything	-	E-4		
E-6	AHU S - 8	Didn't note anything Didn't note anything Didn't toda Super-E 86.5% NA Net an issue		-	E-5		
E-6	AHU S - 3		Didn't note anything	-	E-6		
E-7	AHU S - 4	Didn't note anything Didn't no		-	E-7		
E-8	AHU S - 6		Didn't note anything	-	E-8		
E9	AHU S - 1	Small one on the discharge Didn note anything Didn Toda 87.5% NA Guard was off Guard was off		-	59		
E-10	AHU S - 2		Didn't note anything		E-10		
E-10	AHU S - 3	Small one on the discharge Didn't note anything Odd't note anything Odd't note anything Child's Advances of Children Super-E 86.5% NA Clust was off		-	E-10		
E-12	AHU S - 4		Didn't note anything	-	E-12		
E-12	AHU S - 9		Didn't note anything	-	E-12 E-13		
E-13	AHUS-10			-	E-13		
E-14		Color toole anything     Color toole anything     None     Color toole anything     Color toole anythi		-	E-14		
E-16		Construction anyoning     Noine     Annie      Anni		-	E-15 E-16		
E-16				-	E-16 E-17		
E-18	ALC: 1				E-18		
V - 1	AHU - 1	Didn't note anything None Didn't note as NA NA NA Not an issue	Didn't note anything	L	V-1		

Work Performed By Christopher.braun@abcmws.com

		Damper information	
ion		Return Air / Mixed Air Damper and Motor Information To Penthouse to Relieve Air Damper and Motor Information	on
Damper Type JCI / Internal Link		Processes why balance of the second s	,,
DNE	AHU-1	None DNE DNE DNE None DNE DNE DNE DNE DNE DNE	
DNE	AHU-2	None         DNE         DNE <td>-</td>	-
DNE	AHU-3	None DNE DNE DNE DNE DNE DNE DNE DNE DNE	
JCI WITH ONE 1* STROKE	AHU-4	None         DNE         DNE         None         DNE         DNE </td <td></td>	
JCI INTERNAL LINKAGE	AHU S-1	MILLING C         WITH PILL         WITH PILLING         WITH PILLING         MA         Listence In with PILLING <th< td=""><td></td></th<>	
JCI INTERNAL LINKAGE	AHU S-2	PREDMATE         Weiner Park         CLABBOLDS         NA         Universe in 4 with Universe in 4 with Universe in 4 with Universe in 4 with CLABBOLDS         NA         Universe in 4 with Universe in 4 with CLABBOLDS         NA         JOI INTER UNIVERSE         NA         JOI INTER UNIVERSE	
JCI INTERNAL LINKAGE	AHU S-3	IPRELIMATI Immuno C         NMM         XL bit with 7 CAL BRATCH         NMM         XC bit with 7 CAL BRATCH         PRELIMATE         WITH PLOT         NAM         JO INTER IMMA           MILL         CAL BRATCH         MA         AD SWARE         AD SWARE         NATH PLOT         CAL BRATCH         NA         JO INTER	
JCI INTERNAL LINKAGE	AHU S-4	PREJNAT         NBMO (%)         NBMO (%)         NBMO (%)         NA         Z/I M MD / 7         PREJNATE         WITH PLOT         NA         JOINTE           MINUM (%)         0         MA         Z/I M MD / 7         Z/I M MD / 7         Z/I M MD / 7         NA         JOINTE         NA         JOINTE	
JCI INTERNAL LINKAGE	AHU S-5	PHEJMATT WITHOUT NEEDS NA JOINTERNA PHEJMATIC WITHOUT NEEDS NA JOINTERNA INMAGE NA INM	
JCI INTERNAL LINKAGE	AHU S-6	PREUMATIC WITHOUT NEEDS NA JCINTERNAL PREUMATIC WITHOUT NEEDS NA JCINTERNAL INKAGE NA JCINTERNAL	
JCI INTERNAL LINKAGE	AHU S-7	PREUMATI WITHOUT NEEDS NA JCINTERNAL PREUMATIC WITHOUT NEEDS NA JCINTERNAL INMAGE	
JCI INTERNAL LINKAGE	AHU S-8	PREUMAT WITHOUT NEEDS NA JUINTERNAL PREUMATIC WITHOUT NEEDS NA JUINTERNAL INMAGE PREUMATIC CALIBRATION NA JUINTER	
JCI INTERNAL LINKAGE	AHU S-9	PREUMATI WITHOUT NEEDS NA JCINTERNAL PREUMATIC WITHOUT NEEDS NA JCINTERNAL INMAGE	
JCI INTERNAL LINKAGE	AHU S-10	PREUMATI WITHOUT NEEDS NA JCINTERNAL PREUMATIC WITHOUT NEEDS NA JCINTERNAL INMADE NA JOINTER	

E-1				PNEUMATIC	WITHOUT PILOTS	NEEDS CALIBRATION	NA	JCI INTERNAL LINKAGE
 E-2	r - r	1		 PNEUMATIC	WITHOUT	NEEDS	NA	JCI INTERNAL
E-2			L	 PNEUMATIC	PLOTS	CALIBRATION	NPA.	LINKAGE
E-3				PNEUMATIC	WITH PILOT	NEEDS CALIBRATION	NA	JCI INTERNAL LINKAGE
E-4				PNEUMATIC	WITH PILOT	NEEDS CALIBRATION	NA	JCI INTERNAL
		1			WTHOUT	NEEDS		JCI INTERNAL
E-5				 PNEUMATIC	PLOTS	CALIBRATION	NA	LINKAGE
E-6				PNEUMATIC	WITH PILOT	NEEDS CALIBRATION	NA	JCI INTERNAL LINKAGE
E-7				PNEUMATIC	WITH PILOT	NEEDS CALIBRATION	NA	JCI INTERNAL
		1			WTHOUT	NEEDS		JCI INTERNAL
E-8				PNEUMATIC	PLOTS	CALIBRATION	NA	LINKAGE
E-9				PNEUMATIC	WITH PILOT	NEEDS CALIBRATION	NA	JCI INTERNAL LINKAGE
E-10				PNEUMATIC	WITH PILOT	NEEDS CALIBRATION	NA	JCI INTERNAL
						NEEDS		JCI INTERNAL
E-11				PNEUMATIC	WITH PILOT	CALIBRATION	NA	LINKAGE
E-12				PNEUMATIC	WITH PILOT	NEEDS CALIBRATION	NA	JCI INTERNAL LINKAGE
E-13				PNEUMATIC	WTHOUT PILOTS	NEEDS CALIBRATION	NA	JCI INTERNAL
E-14		1			WTHOUT	NEEDS		JCI INTERNAL
E-14				PNEUMATIC	PLOTS	CALIBRATION	NA	LINKAGE
E-15				PNEUMATIC	WITHOUT PILOTS	NEEDS CALIBRATION	NA	JCI INTERNAL LINKAGE
E-16				PNEUMATIC	WITHOUT PILOTS	NEEDS CALIBRATION	NA	JCI INTERNAL I INKAGE
E-17		1		 PNEUMATIC	WTHOUT	NEEDS	NA	JCI INTERNAL
			·	 	PEOTS	CALIBRATION		LINKAGE
E-18			L	PNEUMATIC	PLOTS	NEEDS CALIBRATION	NA	JCI INTERNAL LINKAGE
V - 1				No Motor				

# DUCT TRAVERSE READINGS ZONE TOTALS

BUILDING NAME

PROJECT

DATE

SYSTEM

5/4/2022

Elvehjem Arts

2022 Building Survey Booster Coil Info

## AREA SERVED

Supply Air Systems

	Original Drawing Specifications for Booster Coil								2022 A	BCMWS	Survey Resu	lts	
Area	Coil	Area		Design		Actual	Actual	•	essure Inf		Air Volur		Misc.
Served	Size	Sq. Ft.	Velocity	CFM	Diff Pres	Duct Size	Coil Size	Entering	Leaving	Diff Pres	Velocity	CFM	Notes
H - 1	42 X 12	3.50	571	2,000	0.40	22 X 12		0.8151	0.458	0.3571	960	1,760	S - 1 Zone 1
H - 1	43 X 13	3.88	515	2,000	0.40	24 X 16		0.6553	0.6024	0.0529	777	2,073	S - 1 Zone 3
H - 1	44 X 14	4.28	468	2,000	0.40	12 x 25		1.401	1.19	0.211	1,535	3,198	S - 2 Zone 7 Fourth Floor Gallery 8
H - 1	45 X 15	4.69	427	2,000	0.40	20 x 12		1.522	1.359	0.163	1,393	2,322	S - 2 Zone 5 174 -35 L174
H - 1	42 X 12	3.50	600	2,100	0.40	24 X 12		1.393	0.9516	0.4414	1,196	2,392	S - 3 Zone 12
H - 1	42 X 12	3.50	600	2,100	0.40	20 X 12		1.419	0.9522	0.4668	1,450	2,417	S - 3 Zone 12
H - 1	42 X 12	3.50	600	2,100	0.40	24 X 12		3.534	0.05	3.484	0	0	S - 4 Zone 16
H - 1	42 X 12	3.50	600	2,100	0.40	24 X 12		3.534	0.05	3.484	0	0	S - 4 Zone 18
H - 2	42 X 18	5.25	571	3,000	0.40	24 X 16		0.6651	0.5867	0.0784	1001	2,670	S - 1 Zone 2
H - 2	42 X 18	5.25	571	3,000	0.40	24 X 16		3.534	0.05	3.484	0	0	S - 4 Zone 17
H - 3	42 X 24	7.00	571	4,000	0.40	24 X 16		1.407	1.178	0.229	1560	4,160	S - 2 Zone 6 Fifth Floor Gallery

H - 3	42 X 24	7.00	571	4,000	0.40	24 X 16	0.7944	0.6206	0.1738	1,089	2,905	S - 1 Zone 4
H - 4	18 X 12	1.50	533	800	0.10	12 X 10	1.29			1,500	1,250	S - 2 Zone 9 29 - 362 Print Gallery
H - 4	18 X 12	1.50	600	900	0.10	10 X 12	1.507	0.9768	0.5302	1,150	958	S - 3 Zone 15
H - 5	24 X 12	2.00	500	1,000	0.10	12 x 12	1.290	1.186	0.104	1,410	1,410	S - 2 Zone 10 South Lobby Rm 220
H - 6	42 X 30	8.75	571	5,000	0.30	28 X 20	1.511	1.093	0.418	1,361	5,293	S - 3 Zone 11
H - 6	42 X 30	8.75	571	5,000	0.30	23 X 24	3.534	0.05	3.484	0	0	S - 4 Zone 19
H - 7	60 X 24	10.00	600	6,000	0.50	26 X 20	1.227	0.8333	0.3937	0.7112 @ Traverse 1,539	5,558	BC is located in the Western walk-way of the Penthouse. The duct traverse is only 12" X 12". Coil spec is 24" X 12"
H - 7	60 X 24	10.00	600	6,000	0.50	26 X 21	1.157	0.894	0.263	1.825" @ Traverse 1,322	5,013	BC for AHU S - 8
H - 8	42 X 18	5.25	571	3,000	0.20	23 X 12	1.271	1.0241	0.2469	0.8005 @ Traverse 1,260	2,415	BC is located in the HW corner of the Penthouse. The duct traverse is only 20" X 20". Coil spec is 42" X 18"
H - 9	54 X 30	11.25	676	7,600	0.20	34 X 20	1.445	0.09987	1.34513	1,740	8,217	S - 10
H - 10	42 X 24	7.00	686	4,800	0.20	20 X 20	1.208	1.03	0.178	0.6632 @ Traverse 1,499	4,164	BC is located in the HW corner of the Penthouse. The duct traverse is only 20" X 20". Coil spec is 42" X 18"
H - 11	42 X 18	5.25	571	3,000	0.20	16 X 20	1.111	0.7686	0.3424	0.4844 @ Traverse 1,353	3,007	BC is located in the NW corner of the Penthouse. The duct traverse is only 16" X 20". Coil spec is 42" X 18"
S - 5 H - 12	24 X 12	2.00	375	750	4.60	12 X 12	0.9723	0.4211	0.5512	0.397 @ Traverse 1,100	1,100	BC is located in the SW corner of the Penthouse. The duct traverse is only 12" X 12".

	1					I	I				I		Coil spec is 24" X 12"
S -6 H - 12	24 X 12	2.00	500	1,000	4.60	12 X 12		1.401	0.3272	1.0738	0.3128 @ Traverse 820	820	BC is located in the Western walk-way of the Penthouse. The duct traverse is only 12" X 12". Coil spec is 24" X 12"
H - 13	24 X 6	1.00	400	400	0.70								
H - 13	24 X 6	1.00	500	500	0.70								
H - 14	36 X 12	3.00	333	1,000	0.10								
H - 15	12 X 6	0.50	300	150	0.20								
H - 15	12 X 6	0.50	400	200	0.20								
H - 16	18 X 6	0.75	400	300	0.40								
H - 17	18 X 9	1.13	533	600	1.20								
				78,400 CFM									Total CFM of Booster Coils H-1 to H-17
												63,100 CFM	Total CFM of Booster Coils tested

Date	5/4/2022	Contact Pe	rson	Mich	al I Wimmor	DE
	Elvehjem	Problem	15011		ael J. Wimmer,	
Building Name	0544	FIODIEIII		Building Pre	ssure and Hum	ially Control
Building Number ABC Work Order #	0108	UW Asset	Number		444545	
	0108	UW Assei	Number		111515	
Phase	010				1001 Demant	2022 6
		Tes	t Data	Design	1991 Report As Found	As Left
Fan ID	AHU - 1	163		Design	As Found	Actual
Location	Mech Room 510	Supply CF	M	4,200	4,589	4,628
ABC Unit Number	0544 - 019B	Return Air		4,200	4,509	4,628
Service	Perimeter Skylights	Outside Air		25	4,300	4,020
Fan Manufacturer	Trane	Design Ext	-	25	89	0
Model #	CCDBO8BAEOK	¥	Percentage	15%	14%	17%
Serial #	K90B04615	Fan RPM	reicentage	928	948	919
Type / Class	FC / I	Motor RPN		1745	1742	1768
	Horizontal Draw Thru		1	1740	1742	1700
Arrangement Motor Manufacturer		Static Pres	ouro lo	0.2	1 55	1 455
Model #	Century 6 - 3555641 - 01			-0.3 0.3	-1.55	-1.455 0.05
	NA	Static Pres Total Syste			0.20	1.51
Serial #	2.0	External Si		2.0	1.75	0.6834
Horsepower Volts / Phase / Hz	460 / 3 / 60	External S	alle Pres	0.60		0.0834
		Outoido Air	Demandr	200/		
Full Load Amps	3.9 1745	Outside Air		39%		
RPM		Return Air		61%		
Frame / Service Factor		Exhaust Ai	r Damper	32%		
Efficiency	100%	Outside Al	<b>. .</b>			
Motor Sheave Make	Browning	Outside Air		-3.0	-8	
Motor Sheave Info	4.75 7/8	Return Air		77.0	68	
Actual Diameter	4.75	Mixed Air		67.0	63	
Fan Sheave Make	Browning	(RAT-MAT	)/ (RAT-OAT	13%	7%	
Fan Sheave Make	6.8 7/8	-	<u>.</u>			
Actual Diameter	6.8		Drive Manu			
Center distance	18	Displayed		60.0	60.0	60.0
# Belts/ Make/Size	1 / Gates / AX53	Percent ou			<b>.</b>	
Actual length	53		(Coul / Sec)	3.9	3.4	3.4
Heater Make	1028 NEMA	Power Fac	tor	1.0	1.0	0.865
Heaters Size	Size 1	Voltage		460	453	453
Starter Location					1 1	
<b>.</b>		Reheat Co				
Number of Filters	1	Airflow	Delta P			
Filter size	12 X 24 X 2	Water Flov				
MERV Rating	10		Gpm			
Number of Filters	1		Delta P			
Filter size	12 X 12 X 2		ass Position			
MERV Rating	10	Cooling Co				
Number of Filters	2	Airflow	Delta P			0.4532
Filter size	24 X 24 X 2	Water Flov				
MERV Rating	10		Gpm			
Number of Filters	2		Delta P			
Filter size	12 X 24 X 2	Reclaim Co				
MERV Rating	10	Airflow	Delta P			
		Water Flov	1			
			Gpm			
Nataa			Delte D			

Notes

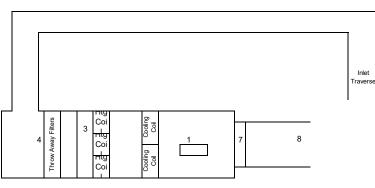
2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Survey of Elvehjem Arts Building - Survey April Survey April Survey April Survey of Elvehjem Arts Building - Survey April Survey April

Delta P

AHU 1

System Profile Sheet

5/4/2022



																Supp Fan Suctio	Cooling	Pre HTG Coil		Pre OA Damper	Atm to Equip Rm		Supply Fan Traverse
Data and			Air Flow	Rates			D	amper	Positior	IS		Suppl	/ Fan										
Date and Conditions	Supply Air		Return /	Air	Outs	ide Air		Outside	Outside	Exhaust	Motor /		LI-7	Outpu		1	2	3	4	5	6	7	8
Conditions	Dis. Duct Traverse	AFMS	Inlet Duct	AFMS	Inlet Duct	AFMS		Air	Air	Air	Motor / Fan RPM	AIVIF 3	ΠZ	Outpu t									
4/29/2022			4628	None			DDC				1768	3.8,	60.0%			-1.41	-	0.0619	-0.6334			0.05	
4/23/2022			4020	None			Actual	0.0			919	3.6	00.076			-1.41	5	-0.9016	-0.0334			0.05	
							DDC																
							Actual																

DATE

**DUCT TRAVERSE READINGS** ZONE TOTALS

**BUILDING NAME** Elvehjem Arts

PROJECT 2022 Building Survey

5/4/2022

SYSTEM

AHU - 1 AREA SERVED Main Duct

Area	Duct	Area	Des			Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
AHU-1 Supply	48 X 16	5.33	788	4,200				No good place to traverse the supply ductwork
AHU-1 Return	40 X 12	3.33	1260	4,200		1388	4628	The unit is 1005 Return Air
AHU-1 Outside Air							0	There is no outside air for this unit

Date	5/4/2	022	Contact Per	son	Mich	ael J. Wimmer,	PF
Building Name	Elveh		Problem			ssure and Hum	
Building Number	054		TTODICIT		Dulluling 110		lary control
ABC Work Order #	010		UW Asset N	lumber		Unknown	
Phase	010		0117100011			Onknown	
T Habe	01	•	<u> </u>			1991 Report	2022 Survey
			Test	Data	Design	As Found	As Left
Fan ID	AHU	- 2	1000	Dulu	Design	Actual	Actual
Location	Mech Ro		Supply CFM	1	4,200	4,514	5,400
ABC Unit Number	Unkn		Return Air C		4,200	4,514	5,400
Service	Perimeter		Outside Air		0	0	0
Fan Manufacturer	Tra		Design Exh		0	0	0
Model #	CCDBD		Outside Air		12%	4%	14%
Serial #	K90V0		Fan RPM	reicentage	900	905	893
Type / Class	FC		Motor RPM		1745	1745	1782
Arrangement	Horizontal I				1745	1745	1702
Motor Manufacturer	Cent		Static Press	uro In	0.0	-1.32	-1.131
Model #	N/		Static Press		0.0	0.22	0.3217
	N/					1.54	
Serial #	3.0		Total Syster External Sta		2.0		1.45
Horsepower			External Sta	auc Pres	0.60	0.80	0.8
Volts / Phase / Hz		/ 3 / 60	Quitaida Ain	D	050/		
Full Load Amps	3.9		Outside Air		25%		
RPM	174 0400T	-	Return Air D		75%		
Frame / Service Factor		1.15	Exhaust Air	Damper	25%		
Efficiency	85.5			<b>-</b>			00/
Motor Sheave Make	Brow	0	Outside Air		-3.0	-8	-8%
Motor Sheave Info	1VP50	7/8	Return Air T		77.0	68	68%
Actual Diameter	4.7		Mixed Air T		67.0	63	63%
Fan Sheave Make	Brow		(RAT-MAT)	(RAI-OAI	13%	7%	7%
Fan Sheave Make	7	7/8				,	
Actual Diameter	7.7		Frequency [				
Center distance	18.		Displayed H		60.0	60.0	60.0
# Belts/ Make/Size	1 / Gate		Percent out				
Actual length	53		Amperes - (		3.9	3.0	3.8
Heater Make	1028 N		Power Facto	or	Air	1.0	86.5
Heaters Size	Size	91	Voltage		460	453	484
Starter Location			Deheat Cail			1 1	
Number of Filters			Reheat Coil	Delta P			0.4504
Number of Filters Filter size	1		Airflow Water Flow	Deila P			0.1584
	12 X 2		water Flow	Carr			
MERV Rating	10			Gpm			
Number of Filters	1		<u>Гала (Di man</u>	Delta P			
Filter size	12 X 1		Face /Bypas				
MERV Rating	10		Cooling Coi				0.0050
Number of Filters	2		Airflow	Delta P			0.3058
Filter size	24 X 2		Water Flow				
MERV Rating	10			Gpm			
Number of Filters	2		De el sime O s	Delta P			
Filter size	12 X 2		Reclaim Co				
MERV Rating	10	)	Airflow	Delta P			
			Water Flow	0			
N (				Gpm Dalta D			
Notes				Delta P			

2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Survey of Elvehjem Arts Building - Survey April Survey April Survey April Survey of Elvehjem Arts Building - Survey April Survey April

DATE

**DUCT TRAVERSE READINGS** ZONE TOTALS

**BUILDING NAME** Elvehjem Arts

PROJECT 2022 Building Survey

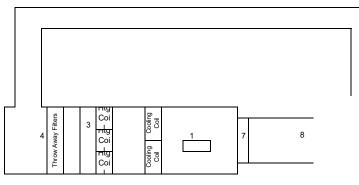
5/4/2022

SYSTEM

AHU - 2 AREA SERVED Main Duct

Area	Duct	Area	Des	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
								No good place to traverse the supply ductwork
AHU-2 Return	38 X 16	4.22	995	4,200	-0.2318	1279	5400	The unit is 1005 Return Air
AHU-1 Outside Air							0	There is no outside air for this unit
AHU-1 Return								

System Profile Sheet



AHU 2

																			Supply Fan Suction	Pre Cooling Coils	Pre HTG Coil		Pre OA Damper	Atm to Equip Rm	Supply Fan Dis	Supply Fan Traverse
Data and			Air Flow	Rates			D	)amper	Position	IS		Suppl	y Fan			Returr	Fan									$\square$
Date and Conditions	Supply Air		Return /	Air	Outsi	de Air			Outside	Exhaust	Motor /		H7	Outpu	Motor / Fan RPM		Hz	Outpu	1	2	3	4	5	6	7	8
Conditions	Dis. Duct Traverse	AFMS	Inlet Duct	AFMS	Inlet Duct	AFMS		Air	Air	Air	Motor / Fan RPM	AIVIE 3	112	ouipu t	Fan RPM	AIVIE 3	ΠZ	ouipu t								
4/29/2022			5400				DDC				1782	3.8, 3.7	60.0%						-1.131	0 9252	0.6669	0 4262			0.3217	
4/23/2022			5400				Actual	0.0			893	3.8	00.070						-1.151	-0.0232	-0.0000	-0.4302			0.3217	
							DDC																			
							Actual																			

Date	5/4/2022	Contact Person	Mich	ael J. Wimmer,	P.E.
Building Name	Elvehjem	Problem	Building Pre	essure and Hum	hidity Control
Building Number	0544				
ABC Work Order #	0108	UW Asset Number		112209	
Phase	010				
				1991 Report	2022 Survey
		Test Data	Design	As Found	As Left
Fan ID	AHU - 3			Actual	Actual
Location	Mech Room 510	Supply CFM	2,000	2,158	1642
ABC Unit Number	0544 - 021A	Return Air CFM	1,800	2,158	1,642
Service	Paige Court Skylight	Outside Air CFM	200	0	0
Fan Manufacturer	Trane	Design Exhaust CFM	200	0	0
Model #	CCDB068UUK	Outside Air Percentage	10%		
Serial #	K90C07657	Fan RPM	1325	981	964
Type / Class	FC / I	Motor RPM	1745		1755
Arrangement	Horizontal Draw Thru				
Motor Manufacturer	Century	Static Pressure In	0.0	-0.52	-0.6616
Model #	NA	Static Pressure Out	0.0	0.18	0.2035
Serial #	NA	Total System SP	1.0	0.70	0.8651
Horsepower	2.0	External Static Pres	0.80	0.80	0.4531
Volts / Phase / Hz	460 / 3 / 60				
Full Load Amps	2.6	Outside Air Damper	100%	100%	100%
RPM	1745	Return Air Damper	0%	0%	0%
Frame / Service Factor		Exhaust Air Damper	100%	100%	100%
Efficiency	85%				
Motor Sheave Make	Browning	Outside Air Temp	-3.0	-8	
Motor Sheave Info	2VL34 7/8	Return Air Temp	77.0	68	
Actual Diameter	3.3	Mixed Air Temp	67.0	63	
Fan Sheave Make	Browning	(RAT-MAT)/ (RAT-OAT	13%	7%	
Fan Sheave Make	4.2 7/8				
Actual Diameter	4.1	Frequency Drive Manu.			
Center distance	15	Displayed Htz	60.0	60.0	60.0
# Belts/ Make/Size	1 / Gates / AX40	Percent output			
Actual length	40	Amperes - (Coul / Sec)	2.6	1.1	1.1
Heater Make	1028 NEMA	Power Factor	1.0	1.0	0.85
Heaters Size	Size 1	Voltage	460	453	484
Starter Location					
		Reheat Coil			
Number of Filters	3	Airflow Delta P			
Filter size	24 x 24 x 2	Water Flow			
MERV Rating	MERV - 10	Gpm			
Number of Filters		Delta P			
Filter size		Face /Bypass Position			
MERV Rating		Cooling Coil			
		Airflow Delta P			0.2921
		Water Flow			
Misc. Notes		Gpm			
		Delta P			
Transfer fan TF-1 serves	this AHU.	Reclaim Coil			

Transfer fan TF-1 serves this AHU. Transfers to Mechanical Room 510

Goofy long linkage between the OA and RA damper.

2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on @212 Pef20rmed By Christopher.braun@abcmws.com

Delta P

Gpm Delta P

Airflow

Water Flow

DATE

# DUCT TRAVERSE READINGS ZONE TOTALS

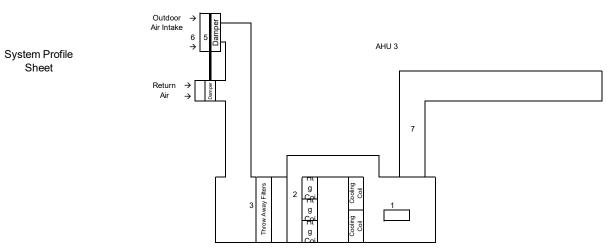
BUILDING NAME Elvehjem Arts

**PROJECT** 2022 Building Survey

5/4/2022

SYSTEM AHU - 3 AREA SERVED

Area	Duct	Area	Des	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
AHU-3 Supply	24 X 12	2.00			0.074	821	1642	



																			Supply Fan Suction	Pre Cooling and Heating Coils	Pre Filter	Pre OA Damper	Atm to Equip Rm	Supply Fan Dis	Supply Fan Traverse
Data and	Air Flow Rates						C	amper	Position	IS	Supply Fan			Return Fan										í – – – – – – – – – – – – – – – – – – –	
Date and Conditions	Supply Air		Return Air		Outsi	ide Air		Outside	Return	Exhaust	Motor / Fan RPM			Output	Motor /		Hz	Outpu	1	2	3	4	÷ 6	7	8
	Dis. Duct Traverse	AFMS	Inlet Duct	AFMS	Inlet Duct	AFMS		Air Air	Air	Air	Fan RPM	AIVIP 3	ΠZ	outpu t	Fan RPM	AIVIP 3	ΠZ	outpu t							1
4/29/2022 on 100% OA Face and Bypass	1642		0		Goofy long linkage between		DDC	100%	0%	100%	1755	1.2 1.1	60.0%	on					-0.662	-0.3695	-0.25			0.2035	0.074
Damper stroked 100%			the OA and RA damper.		Actual 100.0	100.0	964	1.2	00.070	011					-0.002	-0.3033	-0.23			0.2000	0.014				
							DDC																		
							Actual																		

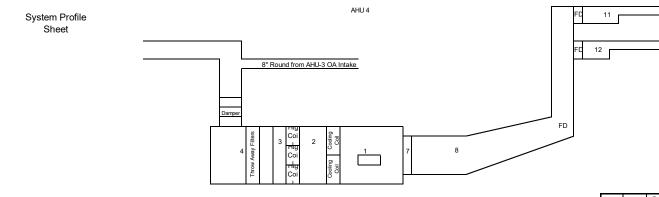
2022 ABCMSW Ap	ril Survey of Elvehjem A	rts Building - Summary on 6_22_3
Date	5/4/2022	Contact Person
Building Name	Elvehjem	Problem B
Building Number	0544	
ABC Work Order #	0108	UW Asset Number
Phase	010	
<u> </u>		·
		Test Data
Fan ID	AHU - 4	
Location	Mech Room 510	Supply CFM
ABC Unit Number	0544 - 019A	Return Air CFM
Service	Mayer Print Center 272	Outside Air CFM
Fan Manufacturer	Trane	Design Exhaust CFM
Model #	CCDB068UUK	Outside Air Percentage
Serial #	K90BO4617	Fan RPM
Type / Class	FC / I	Motor RPM
Arrangement	Horizontal Draw Thru	· · · · · · · · · · · · · · · · · · ·
Motor Manufacturer	Century	Static Pressure In
Model #	NA	Static Pressure Out
Serial #	NA	Total System SP
Horsepower	3.0	External Static Pres
Volts / Phase / Hz	460 / 3 / 60	· · · · ·
Full Load Amps	2.6	Outside Air Damper
RPM	1745	Return Air Damper
Frame / Service Factor	S182T 1.15	Exhaust Air Damper
Efficiency	85.5%	
Motor Sheave Make	Browning	Outside Air Temp
Motor Sheave Info	5.5 7/8	Return Air Temp
Actual Diameter	5.4	Mixed Air Temp
Fan Sheave Make	Browning	(RAT-MAT)/ (RAT-OAT
Fan Sheave Make	4 7/8	
Actual Diameter	3.9	Frequency Drive Manu.
Center distance	15	Displayed Htz
# Belts/ Make/Size	1 / Gates / A42	Percent output
Actual length	41	Amperes - (Coul / Sec)
Heater Make	1028 NEMA	Power Factor
Heaters Size	Size 1	Voltage
Starter Location		
		Reheat Coil
Number of Filters	4	Airflow Delta P
Filtor oizo		Water Flow

Number of Filters	4
Filter size	20 X 20 X 2
MERV Rating	MERV 10
Number of Filters	
Filter size	
MERV Rating	

Misc. Notes

The AHU, in 1990, now has a DX Cooling Coil.

Contact Per	son	Micha	ael J. Wimmer,	PF								
Problem		Building Pressure and Humidity Control										
UW Asset N	lumber	112205										
			1991 Report	2022 Survey								
Test	Data	Design	As Found	As Left								
			Actual	Actual								
Supply CFM		1,900	1,950	2,012								
Return Air C		200	212	1,977								
Outside Air		1,700	1,735	24								
Design Exha		1,700	1,735	24								
Outside Air	Percentage	12%	13%	13%								
Fan RPM		2709	2571	2614								
Motor RPM		1745	1760	1768								
		~ ~		0.04=0								
Static Press		0.0	-1.4	-0.9178								
Static Press		0.0	0.80	0.6732								
Total Syster		3.75	2.20	1.591								
External Sta	auc Pres	1.50	2.20	0.9321								
Outoido Air	Domnor	100%	100/									
Outside Air Return Air D		<u>100%</u> 0%	10% 90%									
Exhaust Air		100%	90%									
	Damper	100%	10%									
Outside Air	Tomn	-3.0	-8									
Return Air T		-3.0	-0 68									
Mixed Air Te		67.0	63									
(RAT-MAT)		13%	7%									
		1070	170									
Frequency [	Drive Manu											
Displayed H		60.0	60.0	60.0								
Percent out												
Amperes - (	Coul / Sec)	3.9	2.6	2.2								
Power Facto		1.0	1.0	0.865								
Voltage		460	453	484								
Reheat Coil												
Airflow	Delta P											
Water Flow												
	Gpm											
	Delta P											
Face /Bypas												
Cooling Coi												
Airflow	Delta P			0.2734								
Water Flow												
	Gpm											
	Delta P											
Reclaim Co	1											
Airflow	Delta P											
Water Flow	0											
	Gpm Datta D											
	Delta P											



																			Supply Fan Suction	Pre Cooling Coils	Pre HTG Coil	Pre Filter	Pre OA Damper	Atm to Equip Rm	Supply Fan Dis	Supply Fan Traverse	Return Fan Suction	Return Fan Discharge	Post the first Dis. Elbow	Post first 1R elbow	Post 90 Deg Elbow vane	Out of the chase	
Data and			Air Flow	Rates			l	Dampe	er Positior	าร		Supply	Fan			Return	Fan																
Date and Conditions	Supply Air		Return	Air	Outs	ide Air			de Return	Exhaust	Motor /		H7	DDC	Motor / Fan RPM		H7	DDC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Conditions	Dis. Duct Traverse	AFMS	Inlet Duct	AFMS	Inlet Duct	AFMS		Air	air	Air	Fan RPM	AIVIF 3	ΠZ	Output	Fan RPM	AIVIF 3	ΠZ	Output															
4/29/2022	2012		1977		24		DDC				1768	2.3	60.0%						0.0179	-0.6444		-0.2589			0.6732								
4/29/2022	2012		1977		24		Actua	I			2614	2.0	00.078						-0.9178	-0.0444		-0.2369			0.0732								
							DDC																										
							Actua	I																									

DATE

# DUCT TRAVERSE READINGS ZONE TOTALS 5/4/2022

**BUILDING NAME** Elvehjem Arts

PROJECT

2022 Building Survey

SYSTEM

AHU - 4 AREA SERVED Main Ducts

Area	Duct	Area	Des					
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
AHU-4 Supply Down Northern Chase	18 X 10	1.25			0.3506	827	1034	
AHU-4 Supply Down N. Center Chase	16 X 11	1.22			0.5054	800	978	
								AHU - 4 Total Supply Air Flow 2012
AHU-4 Return	24 X 12	2.00			-0.0933	989	1977	
AHU-4 Outside Air	8 Inch Round	0.349			-0.1603	68	24	

Date	5/4/2022
Building Name	Elvehjem
Building Number	0544
ABC Work Order #	0108
Phase	010

AHU S-1

Mech Room 510 0544 - 023

Serves 3+4 South & West Trane

NA

K116983

FC / I

Horizontal Draw Thru

Baldor

EM3313T

F0402121414 10.0

12.9

1760

91.7%

Browning

6

Browning

7 25

3 / Gates / BX68

68 1028 NEMA

Size 1

5

20" X 24' x 2"

10

5

12" X 24" X 2"

10

5

20H X 20W X 22 (95%)

5P

4

24H X 12W X 29 (95%)

3P

215T

6

7

460 / 3 / 60

1.15

7/8

7/8

Fan ID

Location

Service

Model #

Serial # Type / Class

Model #

Serial #

RPM

Efficiency

Arrangement

Horsepower Volts / Phase / Hz

Full Load Amps

Frame / Service Factor

Motor Sheave Make Motor Sheave Info

Actual Diameter

Actual Diameter

Center distance

Heater Make Heaters Size

Starter Location

Number of Filters

Number of Filters

Number of Filters

Number of Filters

Filter size

Filter size

Filter size

Filter size

MERV Rating

**MERV** Rating

**MERV** Rating

MERV Rating

Fan Sheave Make

Fan Sheave Make

# Belts/ Make/Size Actual length

Motor Manufacturer

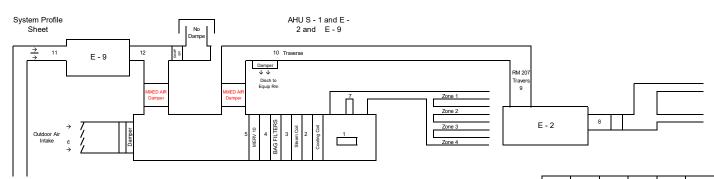
ABC Unit Number

Fan Manufacturer

Contact Per	son	Michael J. Wimmer, P.E.											
Problem		Building Pre	ssure and Hum	idity Control									
UW Asset N	lumber	112212											
			1991 Report										
Test	Data	Design	As Found	As Left									
			Actual	Actual									
Supply CFM		11,000	10,353	8,889									
Return Air C		9,900	6,983	7,591									
Outside Air		1,100	10,353	8,889									
Design Exha		1,100	10,353	7,592									
Outside Air I	Percentage	14%	13%										
Fan RPM		1630	1558	1541									
Motor RPM		1745	1761	1751									
Static Press		0.0	-1.62	-1.876									
Static Press		0.0	1.10	0.7589									
Total System		3.00	2.72	2.63									
External Sta	tic Pres	1.00	1.50	1.14									
Outside Air I		100%	100%	100%									
Return Air D		0%	0%	0%									
Exhaust Air	Damper	100%	100%	100%									
Outside Air	Temp	-3.0	-8	41									
Return Air T	emp	77.0	68	72									
Mixed Air Te		67.0	63	41									
(RAT-MAT)/	' (RAT-OAT)	13%	7%	100%									
r			1 1										
Frequency D													
Displayed H		60.0	60.0	60.0									
Percent outp													
Amperes - (		13.3	9.6	8.1									
Power Facto	or	1.0	1.0	0.87									
Voltage		460	453	483									
Reheat Coil	1												
Airflow	Delta P			0.083									
Water Flow													
	Gpm												
	Delta P												
Face /Bypas													
Cooling Coil													
Airflow	Delta P			0.293									
Water Flow													
	Gpm												
	Delta P												
Reclaim Coi													
Airflow	Delta P												
Water Flow													
	Gpm												
	Delta P												

Misc. Notes

Interlocked with E-2 and E-9 (Return Fans)



_																				Supply Fan Suction	Pre Cooling Coils	Pre HTG Coil	Pre BAG filters	Pre MERV 10 Filter	Atm to Equip Rm	Supply Fan Dis	E - 2 Suction Pressure	E-2 Discharge Pressure	E-2 Discharge Traverse CFM	E-2 Penthouse Ductwork Pressure	E-2 Penthouse Ductwork CFM	E - 9 Suction Pressure	E-9 Discharge Pressure	E-9 Discharge Traverse CFM	
Date and			1	Air Flow Ra	ates					Positions				an S - 1			ırn Fan I																	(	
Conditions	Supply Air			Return Air		Outsid	e Air	0	Outside	Return	Exhaust	Motor /		Hz	DDC	Motor / Fan RPM		H7	DDC	1	2	3	4	5	6	7	8	8	9	10	10	11	12	12	1
	Dis. Duct Traverse	AFMS	Inlet	Duct	AFMS	Inlet Duct	AFMS		Air	Air	Air F	Fan RPM	Auvii O	112	Output	Fan RPM		112	Output																1
	8889	None	E 0	2835	None	NA	NA	DDC	15 PSI			1751	7.8, 8.4	60.0	ON	1768	1.65, 1.6,	60.0	On	-1.876	-1.543	-1.46	-0.5203	-0.3833	na	0.7589	0.6395	0.2214	2835 CEM	0.1674	2714 CFM				
	0009	None	E-2-	2000	None	IN/A		Actual	100%	0%	100%	1508	8.0	00.0	ON	756	1.65	60.0	OII	-1.070	-1.043	-1.40	-0.3203	-0.3633	Tid	0.7369	-0.0365	0.3214	CFM	0.1074	27 14 CFW			1 1	
4/22/2022 AHU S - 1			E - 9	4757	None			DDC	15 PSI							1768	.95,.9 ,.95	60.0	On										Ī			-0.1739	0.1674	4757	
E - 2 AND E - 9			E-9	4/3/	None			Actual	100%	0%	100%					486	,.95	60.0	OII													-0.1739	0.1074	CFM	
								DDC																											
								Actual																										1 <sup>1</sup>	

DATE	<u>DUC</u> 5/4/2022	<u>T TRAVERSE READINGS</u> ZONE TOTALS	
BUILDING NAMI	E Elvehjem Arts		

PROJECT

2022 Building Survey

SYSTEM

S - 1, E - 2 and E - 9 AREA SERVED Main Ductwork

Area	Duct	Area	Des	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	7
AHU S-1 Supply	22 X 12	1.83			0.3610	960	1760	Zone 1 Fifth Fl Gallery 10
AHU S-1 Supply	24 X 16	2.67			0.4513	1001	2670	Zone 2 Fourth Fl Gallery 7
AHU S-1 Supply	24 X 12	2.00			0.4073	777	1555	Zone 3 Fourth Fl Gallery 6
AHU S-1 Supply	24 X 16	2.67			0.5179	1089	2905	Zone 4 Fifth Fl Gallery
							8889	S - 1 Supply Air Total
E - 2 Return / Relief for AHU S - 1	20 x 20	2.78		4,300	0.1674	1021	2,835	Traverse Taken in Penthouse 4/28/2022
E - 2 Return / Relief for AHU S - 1	20 x 20	2.78		4,300	0.3273	977	2,714	Traverse taken at the unit in Room 207 at Discharge
					0.1599			Pressure Drop in the Chase
							-121	CFM Lose
E - 9 Return /Exh Fan for AHU S - 1	28 X 18	3.50			-0.4879	962	3366	
E - 9 Return /Exh Fan for AHU S - 1	58 X 4	1.61			-0.4458	863	1390	Exhaust Air Total (E-9) 4757 CFM
								Exhaust Air Total (E-2+E-9) 7591 CFM

Date	5/4/2022
Building Name	Elvehjem
Building Number	0544
ABC Work Order #	0108
Phase	010

AHU S-2

Mech Room 510 0544 - 022

Serves 1,2,3+4 South and East

Trane M - 25

K116984

FC/I

Horizontal Draw Thru

Baldor

EM2513T

Z1202101706 15.0

17.7

1765

100%

Browning

7.9

Browning

7.4 26

3 / Gates /

68 1039 NEMA

Size 1

5

20" X 24' x 2"

10

5

12" X 24" X 2"

10

5

20H X 20W X 22 (95%)

5P

4

24H X 12W X 29 (95%)

3P

254T

8

7.5

460 / 3 / 60

1.15

7/8

7/8

Fan ID

Location

Service

Model # Serial #

Model #

Serial #

RPM

Efficiency

Type / Class

Arrangement

Horsepower Volts / Phase / Hz

Full Load Amps

Frame / Service Factor

Motor Sheave Make

Motor Sheave Info

Fan Sheave Make

Fan Sheave Make

Actual Diameter

Actual Diameter

Center distance # Belts/ Make/Size

Actual length

Heater Make Heaters Size

Starter Location

Number of Filters

Number of Filters

Number of Filters

Number of Filters

Filter size

Filter size

Filter size

Filter size

MERV Rating

**MERV** Rating

**MERV** Rating

MERV Rating

ABC Unit Number

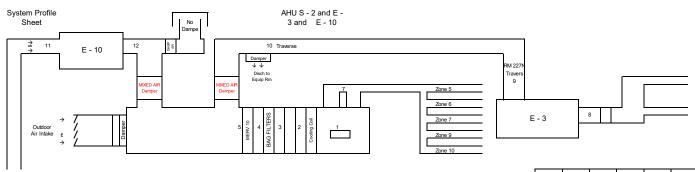
Fan Manufacturer

Motor Manufacturer

Contact Person	Mich	ael J. Wimmer,	P.E.								
Problem	Building Pressure and Humidity Control										
UW Asset Number		112211									
	T	1991 Report									
Test Data	Design	As Found	As Left								
		Actual	Actual								
Supply CFM	11,000	9,927	13,380								
Return Air CFM	9,900	0	6,048								
Outside Air CFM	1,100	9,927	13,380								
Design Exhaust CFM	1,100	6,070	6,048								
Outside Air Percentage	14%	13%	0044								
Fan RPM	1630	1771	2014								
Motor RPM	1745	1739	1751								
			0.0-0								
Static Pressure In	0.0	-1.85	-2.976								
Static Pressure Out	0.0	1.60	1.819								
Total System SP	3.00	3.45	4.80								
External Static Pres	1.00	1.50	2.4171								
			1000/								
Outside Air Damper	100%	100%	100%								
Return Air Damper	0%	0%	0%								
Exhaust Air Damper	100%	100%	100%								
			10								
Outside Air Temp	-3.0	-8	42								
Return Air Temp	77.0	68	72								
Mixed Air Temp	67.0	63	42								
(RAT-MAT)/ (RAT-OAT)	) 13%	7%	100%								
		<u> </u>									
Frequency Drive Manu. Displayed Htz	60.0	60.0	60.0								
Percent output	00.0	00.0	00.0								
Amperes - (Coul / Sec)	13.3	13.7	15.4								
Power Factor	1.0	1.0	0.86								
Voltage	460	453	484								
Vollage	400	400	404								
Reheat Coil											
Airflow Delta P			0								
Water Flow			0								
Gpm											
Delta P											
Face /Bypass Position											
Cooling Coil	1										
Airflow Delta P		1	0.578								
Water Flow		1	0.070								
Gpm		1									
Delta P		1									
Reclaim Coil	1										
Airflow Delta P		1									
Water Flow	1										
Gpm		1									
Delta P		1									
Boild I	I	I									

Misc. Notes

Interlocked with E-3 and E-10 (Return Fans)



																		Supply Fan Suction	Pre Cooling Coils		Pre BAG filters	Pre MERV 10 Filter	Atm to Equip Rm	Supply Fan Dis	E - 3 Suction Pressure	E-3 Discharge Pressure	E-3 Discharge Traverse CFM	E-3 Penthouse Ductwork Pressure	E-3 Penthouse Ductwork CFM	E - 10 Suction Pressure	E-10 Discharge Pressure	E-10 Discharge Traverse CFM	
Date and	Supply Air		Air Flow Ra Return Air	ates	Outsid		1	amper Po		_	Supply I				rn Fan E							_	_	-	-		_	I			l		1
Conditions	Dis. Duct Traverse	AFMS	Inlet Duct	AFMS	Inlet Duct	AFMS		Outside Ri Air	aturn Exhai Air Air	Fan RP	AMPS	Hz	DDC Output	Motor / Fan RPM	AMPS	Hz	DDC Output	1	2	3	4	5	6	7	8	8	9	10	10	11	12	12	1
	13380	None	E - 3 - 3194 CFM	None	NA	NA	DDC Actual		0% 100	1765 % 2017	15,	60.0	ON	1775 546	2.4, 2.4, 2.4	60.0	On	-2.976	-2.398	-2.398	-0.8924	-0.5981	na	1.819	-0.3518	0.4554	NO PLACE TO TRAVERSE	0.055	3194 CFM				
4/22/2022 AHU S - 2 E - 3 AND E - 10			E - 10 2854 CFM	None			DDC Actual		0% 100	%				1770 1189	.95, .95, .95	60.0	On													-0.3832	-0.05	2854 CFM	
							DDC Actual		-																								

DATE <u>5/</u>	<u>DUCT TRAVERSE READINGS</u> <u>/4/2022</u> <u>ZONE TOTALS</u>
BUILDING NAME	Elvehjem Arts
PROJECT	2022 Building Survey
SYSTEM	S - 2, E - 3 and E - 1( AREA SERVED Main Ductwork

Area	Duct	Area	Des	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
AHU S - 2 Supply	12 X 12	1.00			0.5677	1410	1410	Zone - 10 H - 5 310 South Lobby 220
AHU S - 2 Supply	12 X 25	2.08			0.704	1535	3197	Zone - 7 H - 1 Fourth Fl Gallery 8
AHU S - 2 Supply	20 X 24	3.33			1.007	1560	5201	Zone - 6 H - 3 Fifth Fl Gallery
AHU S - 2 Supply	20 X 12	1.67			0.5624	1393	2322	Zone - 5 H - 1 174 - 35 L174
AHU S - 2 Supply	12 X 10	0.83			0.9361	1500	1250	Zone - 9 H - 4 29 362 Print Gallery
							13380	S - 2 Supply Air Total
E - 3 Return / Relief for AHU S - 2	20 X 20	2.78			0.0500	1150	3194	Traverse Taken in Penthouse 4/28/2022
E - 3 Return / Relief for AHU S - 2	20 X 20	2.78		4,300	0.4554		3,194	No place to Traverse the unit in Room 272N
					0.4054			Pressure Drop in the Chase
							0	CFM Lose
E - 10 Return /Exh Fan for AHU S - 2	20 X 12	1.67			-0.2631	1033	1722	
E - 10 Return /Exh Fan for AHU S - 2	58 X 4	1.61			-0.2856	703	1132	Exhaust Air Total (E-10) 2854 CFM
								Exhaust Air Total (E-3 + E-10) 6048 CFM

AHU S-3

Mech Room 510 0544 - 018

Serves 1,2,3+4 North

Trane M - 25

K118985

FC/I

Horizontal Draw Thru

Baldor

E13313T

F8402290489

10.0

12.9

1760

92%

Browning

6.5

Browning

7.25 25

3 / Gates / B68

68 1041 NEMA

Size 1

5

20" X 24' x 2"

10

5

12" X 24" X 2"

10

5

20H X 20W X 22 (95%)

5P

4

24H X 12W X 29 (95%)

3P

215T

6.5

7.25

460 / 3 / 60

1.15

7/8

7/8

Date	5/4/2022
Building Name	Elvehjem
Building Number	0544
ABC Work Order #	0108
Phase	010

Fan ID

Location

Service

Model # Serial #

Model #

Serial #

RPM

Efficiency

Type / Class

Arrangement

Horsepower

ABC Unit Number

Fan Manufacturer

Motor Manufacturer

Volts / Phase / Hz

Frame / Service Factor

Motor Sheave Make

Motor Sheave Info

Fan Sheave Make

Fan Sheave Make

# Belts/ Make/Size Actual length

Actual Diameter

Actual Diameter

Center distance

Heater Make Heaters Size

Starter Location

Number of Filters

Number of Filters

Number of Filters

Number of Filters

Filter size

Filter size

Filter size

Filter size

MERV Rating

**MERV** Rating

**MERV** Rating

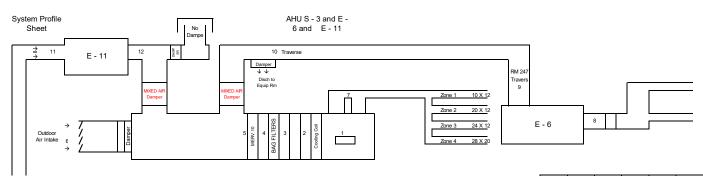
MERV Rating

Full Load Amps

Contact Pers	son	Mich	ael J. Wimmer,	P.E.								
Problem		Building Pressure and Humidity Control										
				-								
UW Asset N	umber		112203									
			1991 Report	2022 Survey								
Test	Data	Design	As Found	As Left								
			Actual	Actual								
Supply CFM		11,000	10,266	11,060								
Return Air C	FM	9,900	254	254								
Outside Air 0	CFM	1,100	10,266	11,060								
Design Exha	ust CFM	1,100	4,386	6,171								
Outside Air F	Percentage	14%	13%	13%								
Fan RPM		1755	1771	1746								
Motor RPM		1630	1733	1766								
			1									
Static Press	ure In	0.0	-2.00	-1.970								
Static Press		0.0	1.40	1.531								
Total System		3.00	3.40	3.50								
External Stat		1.00	1.50	1.9845								
				1.0010								
Outside Air I	Damper	100%	100%	100%								
Return Air D		0%	0%	0%								
Exhaust Air I		100%	100%	100%								
	Bamper	10070	10070	10070								
Outside Air 1	Temn	-3.0	-8	42								
Return Air Te		77.0	68	72								
Mixed Air Te		67.0	63	42								
(RAT-MAT)/		13%	7%	100%								
		1070	170	10070								
Frequency D	rive Manu											
Displayed Ht		60.0	60.0	60.0								
Percent outp		00.0	00.0	00.0								
Amperes - (0		13.3	12.0	12.0								
Power Facto		1.0	1.0	77.2								
Voltage	,	460	453	484								
voltage		400	400	-0-								
Reheat Coil												
Airflow	Delta P											
Water Flow	Delta I											
Trator Flow	Gpm											
	Delta P											
Face /Bypas			<u> </u>									
Cooling Coil			<u> </u>									
Airflow	Delta P			0.395								
Water Flow			<u> </u>	0.000								
	Gpm		+									
	Opini Delta P		} }									
Reclaim Coil			}									
Airflow	Delta P		}									
Water Flow												
VALEI FIUW	Com											
	Gpm Dolto D											
	Delta P											

Misc. Notes

Interlocked with E-6 and E-11 (Return Fans)



<u>.</u>																		Supply Fan Suction	Pre Cooling Coils		Pre BAG filters	Pre MERV 10 Filter	Atm to Equip Rm	Supply Fan Dis	E - 6 Suction Pressure	E-6 Discharge Pressure	E-6 Discharge Traverse CFM IN RM 247	E-6 Penthouse Ductwork Pressure	E-6 Penthouse Ductwork CFM	E - 11 Suction Pressure	E-11 Discharge Pressure	E-11 Discharge Traverse CFM	
Date and Conditions	Supply Air		Air Flow Ra Return Air	ites	Outsic	le Air		ide Ret		-		Fan S - 3			rn Fan E			1	2	3	4	5	6	7	8	8	9	10	10	11	12	12	
	Dis. Duct Traverse	AFMS	Inlet Duct	AFMS	Inlet Duct	AFMS	A	r A	r Air	t Motor / Fan RPM	AMPS	HZ	Output	Fan RPM	AMPS	HZ	DDC Output																
	11060	None	E - 6	None	NA	NA	DDC 15	PSI		1766	12, 12,	60.0	ON	1772		60.0	On	-1.970	-1.575	-1.575	0.6040	-0.4535	na	1 5 2 1	-0.5433	0.2736	4051	0.0087	2374				
	11000	None	2374 CFM	None	INA.		Actual 100	0% 0%	6 100%	1746	12,	00.0	ON	635	1.9,	60.0	OII	-1.970	-1.575	-1.575	-0.0940	-0.4000	IId	1.551	-0.0433	0.2730	CFM	0.0087	CFM				
4/22/2022 AHU S - 3			E - 11	Name			DDC 15	PSI						1752		60.0	On													-0.7525	0.4057	3797	
E - 6 AND E - 11			3797 CFM	None			Actual 100	0% 0%	6 100%					676	1.4,	60.0	On													-0.7525	-0.1257	CFM	
							DDC																										
							Actual																										

DATE 5	14/2022 ZONE TOTALS
BUILDING NAME	Elvehjem Arts
PROJECT	2022 Building Survey
SYSTEM	S-3, E-6 and E-11 AREA SERVED Main Ductwork

Area	Duct	Area		sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
AHU S - 3 Supply	10 X 12	0.83			0.9087	1150	959	Zone - 15 H - 4 Rm
Suppry	12							362 Zone - 13
AHU S - 3 Supply	20 X 12	1.67			0.6527	1450	2416	H - 1 North Lobby 200 K
AHU S - 3 Supply	24 X 12	2.00			0.6287	1196	2393	Zone - 12 H - 1 4th FL Gallery 6 Rm 450 NE Corner
AHU S - 3 Supply	28 X 20	3.89			0.9285	1361	5292	Zone - 11 H - 6 Rm 470 East Wall Center Rm Gallery 7
							11060	S - 3 Supply Air Total
E - 6 Return / Relief for AHU S - 3	20 X 20	2.78			0.0087	855	2374	Traverse Taken in Penthouse 4/28/2022
E - 6 Return / Relief for AHU S - 3	22 X 22	3.36			0.2736	1205	4051	Traverse taken at the unit in Room 247
					0.2649			Pressure Drop in the Chase
							1,677	CFM Lose
E - 11 Return /Exh Fan for AHU S - 3	20 X 16	2.22			-0.3512	1160	2577	
E - 11 Return /Exh Fan for AHU S - 3	58 X 4	1.61			-0.2986	757	1220	Exhaust Air Total (E-11) 3797 CFM
								Exhaust Air Total (E-6+E-11) 6170 CFM

Date	5/1/	2022	Contact Person	Mich	ael J. Wimmer,	DE	
Building Name		hjem	Problem		ssure and Hum		
Building Number		44		Dulluling Fie			
ABC Work Order #		08	UW Asset Number		112201		
Phase		10			112201		
Thuse	0				1991 Report	2022 Survey	
			Test Data	Design	As Found	As Left	
Fan ID	AHU	S-4	- Foot Duid	Doolgii	Actual	Actual	
Location		oom 510	Supply CFM	12,000	10,165	10,102	
ABC Unit Number		- 017	Return Air CFM	9,900	2,857	NA	
Service		2,3+4 North	Outside Air CFM	1,100	10,165	NA	
Fan Manufacturer		ane	Design Exhaust CFM	1,100	7,308	Na	
Model #		- 25	Outside Air Percentage	14%	13%	NA	
Serial #		6986	Fan RPM	1755	1859	1870	
Type / Class		;/1	Motor RPM	1780	1760	1785	6/22/2022
		Draw Thru					
Motor Manufacturer		dor	Static Pressure In	0.0	-1.83	-0.35	-2.895
Model #		313T	Static Pressure Out	0.0	1.40	3.524	0.69
Serial #		290489	Total System SP	3.25	3.23	3.87	3.59
Horsepower		0.0	External Static Pres	1.00	1.50	3.674	1.380
Volts / Phase / Hz		/ 3 / 60				0.01 1	
Full Load Amps		2.9	Outside Air Damper	100%	100%	100%	0%
RPM		60	Return Air Damper	0%	0%	0%	100%
Frame / Service Factor	215T	1.15	Exhaust Air Damper	100%	100%	100%	0%
Efficiency		7%					•
Motor Sheave Make		vning	Outside Air Temp	-3.0	-8	42	NA
Motor Sheave Info	6	7/8	Return Air Temp	77.0	68	72	NA
Actual Diameter		6	Mixed Air Temp	67.0	63	42	NA
Fan Sheave Make		vning	(RAT-MAT)/ (RAT-OAT	13%	7%	100%	NA
Fan Sheave Make	7	7/8			ļ		
Actual Diameter	-	7	Frequency Drive Manu				NA
Center distance	2	5	Displayed Htz	60.0	60.0	60.0	60.0
# Belts/ Make/Size		s / BX68	Percent output				ON
Actual length		8	Amperes - (Coul / Sec)	13.3	13.9	9.0	13.6
Heater Make		NEMA	Power Factor	1.0	1.0	77.2	NA
Heaters Size		e 1	Voltage	460	453	484	NA
Starter Location							
			Reheat Coil				
Number of Filters	Į	5	Airflow Delta P				
Filter size	20" X 2	24' x 2"	Water Flow				
MERV Rating		0	Gpm				
Number of Filters		5	Delta P				0.119
Filter size	12" X 2	24" X 2"	Face /Bypass Position				
MERV Rating		0	Cooling Coil				
Number of Filters		5	Airflow Delta P			0.255	0.376
Filter size	20H X 20W	X 22 (95%)	Water Flow				
MERV Rating		P	Gpm				
Number of Filters	4	4	Delta P				
Filter size	24H X 12W	X 29 (95%)	Reclaim Coil				
MERV Rating		P	Airflow Delta P				
. <u> </u>			Water Flow				
Misc. Notes			Gpm				
			Delta P				
				•			

Interlocked with E-7 and E-12 (Return Fans)

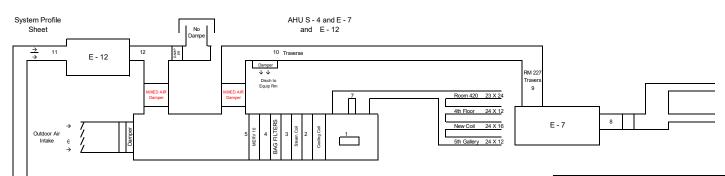
2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on @@alk\_P@alk\_P@algormed By Christopher.braun@abcmws.com

DATE 5/-	<u>A/2022</u> <u>DUCT TRAVERSE READINGS</u> ZONE TOTALS
BUILDING NAME	Elvehjem Arts
PROJECT	2022 Building Survey
SYSTEM	S - 4, E - 7 and E - 12 AREA SERVED Main Ductwork

Area	Duct	Area	Des	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
	00							Z - 19
AHU S - 4	23 X	3.83			3.534	0	0	H - 6 Rm
Supply	24	3.03			3.334	0	0	420
Supply	24							420
								Z - 18
	24	0.00			0.504	0	0	H - 1
AHU S - 4 Supply	X 12	2.00			3.534	0	0	18-Mar
Supply	12							
								Z - 17
	24							H - 2
AHU S - 4	X	2.67			3.534	0	0	New
Supply	16							Coil
								Z - 16
	24							H - 1
AHU S - 4	Х	2.00			3.534	0	0	5th Gallery
Supply	12							12
								S - 4
								Supply
							0	Air
								Total
								Traverse
E - 7	20							Taken in
Return / Relief		2.78			0.0007	52	144	Penthouse
for AHU S - 4	20	-				-		4/28/2022
								(EF-7 was
								off)
E - 7	20							Traverse taken at
Return / Relief		2.78			0.4097	1258	3495	the unit
for AHU S - 4	20	2.10			0.1007	1200	0100	in Room
								227
					0.409			Pressure Drop in the
					0.405			Chase
								Onase
							<del>3,351</del>	CFM Lose
_								
E - 12	28							
Return /Exh	X	3.11			-0.3664	1041	3239	
Fan	16							
for AHU S - 4								
								Exhaust
E - 12	58							Air Total
Return /Exh	X	1.61			-0.4051	958	1544	(E-12)
Fan	4	-						4783
for AHU S - 4								CFM
								Exhaust
								Air Total
								(E-7+E-12)
								4783 CFM
								CI-IVI
J	I	I	I	I	I			ļļ

DATE	5/4/2022	DUCT TR	AVERSE NE TOTA		<u>GS</u>		
BUILDING NAME	Elvehjem	Arts					-
PROJECT	2022 Buil	ding Survey					-
SYSTEM	<u>S-4, E-7</u>	7 and E - 12	AREA S	SERVED	Main D	uctwork	-
Area Du	uct Area	Des	ign	~ 7	Actual		

Area	Duct	Area	Des	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
AHU S - 4 Supply	23 X 24	3.83			0.5093	1019	3906	Z - 19 H - 6 Rm 420 6/22/2022
AHU S - 4 Supply	24 X 12	2.00			0.2988	805	1610	Z - 18 H - 1 18-Mar 6/22/2022
AHU S - 4 Supply	24 X 16	2.67			0.4678	1056	2816	Z - 17 H - 2 New Coil 6/22/2022
AHU S - 4 Supply	24 X 12	2.00			0.4063	885	1770	Z - 16 H - 1 5th Gallery 12 6/22/2022
							10102	S - 4 Supply Air Total
E - 7 Return / Relief for AHU S - 4	20 X 20	2.78			0.0007	52	144	Traverse Taken in Penthouse 4/28/2022 (EF-7 was off)
E - 7 Return / Relief for AHU S - 4	20 X 20	2.78			0.4097	1258	3495	Traverse taken at the unit in Room 227
					<del>0.409</del>			Pressure Drop in the Chase
							<del>3,351</del>	CFM Lose
E - 12 Return /Exh Fan for AHU S - 4	28 X 16	3.11			-0.3664	1041	3239	
E - 12 Return /Exh Fan for AHU S - 4	58 X 4	1.61			-0.4051	958	1544	Exhaust Air Total (E-12) 4783 CFM
								Exhaust Air Total (E-7+E-12) 14886 CFM



																			Supply Fan Suction	Pre Cooling Coils	Pre HTG Coil	Pre BAG filters	Pre MERV 10 Filter	Atm to Equip Rm	Supply Fan Dis	E - 7 Suction Pressure	E - 7 Discharge Pressure	E - 7 Discharge Traverse CFM	E - 7 Penthouse Ductwork Pressure	E - 7 Penthouse Ductwork CFM	E - 12 Suction Pressure		E - 12 Discharge Traverse CFM	
Date and	Supply Air		Air Flow Ra Return Air	ites	Outsid	le Air		amper P	1			Supply Far		DDC		n Fan E			1	0	0	4	5	6	7	8	٩	0	10	10	11	12	12	
Conditions		AFMS	Inlet Duct	AFMS	Inlet Duct	AFMS		Air	Return E Air	Air Fa	Motor / an RPM	AMPS	Hz	Output	Motor / Fan RPM	AMPS	Hz	DDC Output		2	5	-	5	0	,	0	3	3	10	10		12	12	
	500?	None	E - 7 3495 CFM	None	NA	NA	DDC Actual		0% ·		1770 1860	9.0	60.0	ON	1745 717	1.8, 2.0, 2.0	60.0	On	NA	NA	NA	NA	NA	NA	3.514	-0.6385	0.4097	3495 CFM	0.05	3495i CFM				
6/22/2022 AHU S - 4 E - 7 AND			E - 12 4783 CFM	None			DDC Actual		0%	100%					1757 388	1.4	60.0	On													-0.6673	-0.0571	4783 CFM	
E - 12															500																$\vdash$	<u> </u>	+	
	10102						DDC Actual			NA <sup>·</sup>		13.6,13.2, 14							-2.895	-2.519	-2.4	-1.546	-1.286		0.69									

Date	5/4/2022	Contact Person
Building Name	Elvehjem	Problem
Building Number	0544	
ABC Work Order #	0108	UW Asset Numb
Phase	010	
		_

AHU S-5

Fan ID

Contact Pe	erson	Mich	ael J. Wimmer	. P.E.					
Problem		Building Pressure and Humidity Control							
				<b>y</b>					
UW Asset	Number		112196						
			1991 Report						
Tes	t Data	Design	As Found						
			Actual	Actual					
Supply CF		10,400	0	7,613					
Return Air		1,000	0	0					
Outside Ai		9,400	0	7,613					
Design Ex		9,400	0	5,989					
	r Percentage	14%	13%	100%					
Fan RPM		1250	1247	1621					
Motor RPN	1	1780	1780	1774					
			1						
Static Pres		0.0	-1.00	-1.26					
Static Pres		0.0	0.50	1.11					
Total Syste		2.20	1.50	2.37					
External S	tatic Pres	1.00	1.50	1.790					
Outside Ai		100%	100%	100%					
Return Air		0%	0%	0%					
Exhaust Ai	r Damper	100%	100%	100%					
Outside Ai		-3.0	-8	42					
Return Air		77.0	68	72					
Mixed Air		67.0	63	42					
(RAT-MAT	)/ (RAT-OAT	13%	7%	100%					
<b>-</b>	Daine Mana			1					
	Drive Manu		<u> </u>	<u> </u>					
Displayed		60.0	60.0	60.0					
Percent ou		7.6	6.0	7.0					
	(Coul / Sec)	7.6	6.8	7.8					
Power Fac	tor	1.0	1.0	1.0					
Voltage		460	453	453					
Reheat Co	il								
Airflow	Delta P			0.0372					
Water Flov				0.0372					
	Gpm Delta P								
Face /Pure									
	ass Position								
Cooling Co	Delta P			0.2400					
Airflow Water Flov				0.3188					
vvalei FIOV									
	Gpm Delta P								
Poolaim C									
Reclaim C									
Airflow	Delta P								
Water Flow									
	Gpm		1	1					
	Delta P								

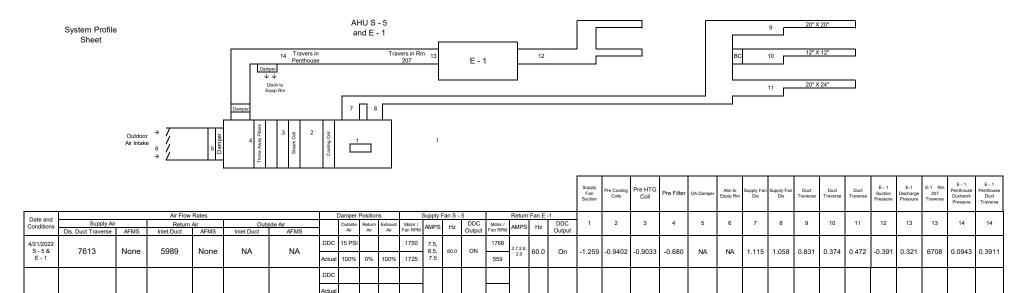
LocationMech Room 510ABC Unit Number0544 - 014ServiceServes 1 and 2 NorthFan ManufacturerTraneModel #M - 21Serial #K116681Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #NASerial #NASerial #NASerial #NAHorsepower7.5Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213TI.15EfficiencyMotor Sheave MakeBrowningMotor Sheave Info127/8Actual DiameterActual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heaters SizeSize 1Starter Location512		
ServiceServes 1 and 2 NorthFan ManufacturerTraneModel #M - 21Serial #K116681Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #NASerial #NAHorsepower7.5Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213T1.15EfficiencyMotor Sheave MakeBrowningMotor Sheave Info127/8Actual DiameterActual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Location	Mech Room 510
Fan ManufacturerTraneModel #M - 21Serial #K116681Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #NASerial #NAHorsepower7.5Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213T1.15EfficiencyMotor Sheave MakeBrowningMotor Sheave Info127/8Actual DiameterActual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	ABC Unit Number	0544 - 014
Model #M - 21Serial #K116681Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #NASerial #NAHorsepower7.5Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213T1.15EfficiencyDotor Sheave MakeBrowningMotor Sheave Info127/8Actual DiameterActual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Service	Serves 1 and 2 North
Serial #K116681Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #NASerial #NAHorsepower7.5Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213T1.15EfficiencyMotor Sheave MakeBrowningMotor Sheave Info127/8Actual DiameterActual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Fan Manufacturer	Trane
Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #NASerial #NAHorsepower7.5Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213T1.15EfficiencyMotor Sheave MakeBrowningMotor Sheave Info127/8Actual DiameterActual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Model #	M - 21
ArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #NASerial #NAHorsepower7.5Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213T1.15Efficiency100%Motor Sheave MakeBrowningMotor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1		
Motor ManufacturerBaldorModel #NASerial #NAHorsepower7.5Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213T1.15Efficiency100%Motor Sheave MakeBrowningMotor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Type / Class	
Model #NASerial #NAHorsepower7.5Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213T1.15Efficiency100%Motor Sheave MakeBrowningMotor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Arrangement	Horizontal Draw Thru
Serial #NAHorsepower7.5Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213T1.15Efficiency100%Motor Sheave MakeBrowningMotor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Motor Manufacturer	Baldor
Horsepower7.5Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213T1.15Efficiency100%Motor Sheave MakeBrowningMotor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Model #	NA
Volts / Phase / Hz460 / 3 / 60Full Load Amps10RPM1760Frame / Service Factor213T1.15Efficiency100%Motor Sheave MakeBrowningMotor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Serial #	NA
Full Load Amps10RPM1760Frame / Service Factor213T1.15Efficiency100%Motor Sheave MakeBrowningMotor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Horsepower	
RPM1760Frame / Service Factor213T1.15Efficiency100%Motor Sheave MakeBrowningMotor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Volts / Phase / Hz	460 / 3 / 60
Frame / Service Factor213T1.15Efficiency100%Motor Sheave MakeBrowningMotor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Full Load Amps	10
Efficiency100%Motor Sheave MakeBrowningMotor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1		
Motor Sheave MakeBrowningMotor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Frame / Service Factor	
Motor Sheave Info127/8Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1		100%
Actual Diameter11.9Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Motor Sheave Make	
Fan Sheave MakeBrowningFan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Motor Sheave Info	
Fan Sheave Make107/8Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Actual Diameter	11.9
Actual Diameter9.9Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Fan Sheave Make	
Center distance18# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Fan Sheave Make	
# Belts/ Make/Size1 / Gates / B54Actual length54Heater Make1039 NEMAHeaters SizeSize 1	Actual Diameter	
Actual length54Heater Make1039 NEMAHeaters SizeSize 1		=
Heater Make1039 NEMAHeaters SizeSize 1	# Belts/ Make/Size	1 / Gates / B54
Heaters Size Size 1		•.
	Heater Make	1039 NEMA
Starter Location	Heaters Size	Size 1
	Starter Location	

Number of Filters	10
Filter size	20 X 20 X 2
MERV Rating	MERV 10
Number of Filters	
Filter size	
MERV Rating	

Misc. Notes

Interlocked with E-1 (Return Fan)

DDC Actual



#### **DUCT TRAVERSE READINGS** ZONE TOTALS

DATE

**BUILDING NAME** Elvehjem Arts Building

PROJECT 2022 Building Survey

5/4/2022

SYSTEM

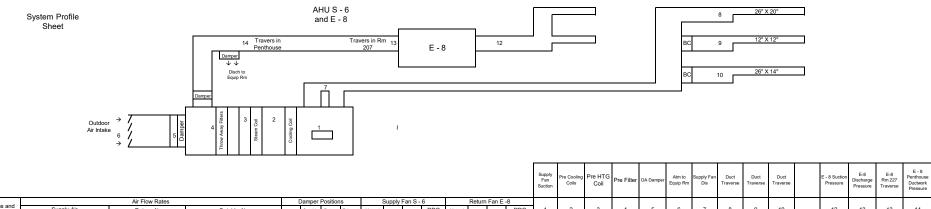
AHU S - 5 AREA SERVED Main Ductwork

Area	Duct	Area		sign		Actual		100%
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	Economizer
AHU S-5 Supply Duct	20 X 24	3.33			0.4718	1076	3587	Supply Air Total 7613 CFM
AHU S-5 Supply Duct	12 x 12	1.00			Entering 0.3737 Leaving Delta	1110	1110	ВС Н - 12
AHU S-5 Supply Duct	20 X 20	2.78			0.8306	1050	2917	
E - 1 Return / Relief for AHU S - 5	28 x 22	4.28		8,400	0.0943	1400	5989	Traverse Taken in Penthouse 4/28/2022
E - 1 Return / Relief for AHU S - 5	22 x 32	4.89		8,400	0.3214	1372	6,708	Traverse taken at the unit in Room 207 at Discharge
					0.2271			Pressure Drop in the Chase
							719	CFM Lose
								Measured Difference between S-5 & E-1 1624 CFM

All the fans are on 100% economizer.

Date	5/4/2022	Contact Person	Mich	ael J. Wimmer,	DE
Building Name	Elvehjem	Problem			
0	0544		Building Pre	ssure and Hum	indity Control
Building Number ABC Work Order #	0108	UW Asset Number		112198	
Phase	0108			112190	
r 11030				1991 Report	2022 Survey
		Test Data	Design	As Found	As Left
Fan ID	AHU S-6		Design	Actual	Actual
Location	Mech Room 510	Supply CFM	9,325	0	10,067
ABC Unit Number	0544 - 015	Return Air CFM	7,650	0	0
Service	Serves 1 and 2 West	Outside Air CFM	1,675	0	10,067
Fan Manufacturer	Trane	Design Exhaust CFM	1,675	0	4,253
Model #	M - 21	Outside Air Percentage	14%	13%	13%
Serial #	K116682	Fan RPM	901	811	1711
Type / Class	FC/I	Motor RPM	1780	1780	1766
Arrangement	Horizontal Draw Thru				
Motor Manufacturer	Unknown	Static Pressure In	0.0	-0.70	-1.115
Model #	EM3311P	Static Pressure Out	0.0	0.45	1.343
Serial #	F0401090898	Total System SP	1.0	1.15	2.46
Horsepower	7.5	External Static Pres	2.12	1.50	1.768
Volts / Phase / Hz	460 / 3 / 60		. —		
Full Load Amps	10	Outside Air Damper	100%	100%	100%
RPM	1760	Return Air Damper	0%	0%	0%
Frame / Service Factor	213T 1.15	Exhaust Air Damper	100%	100%	100%
Efficiency	91%		-	-	-
Motor Sheave Make	Browning	Outside Air Temp	-3.0	-8	42
Motor Sheave Info	5.6 7/8	Return Air Temp	77.0	68	72
Actual Diameter	5.5	Mixed Air Temp	67.0	63	42
Fan Sheave Make	Browning	(RAT-MAT)/ (RAT-OAT	13%	7%	100%
Fan Sheave Make	10 7/8			• •	
Actual Diameter	9.9	Frequency Drive Manu			
Center distance	18	Displayed Htz	60.0	60.0	60.0
# Belts/ Make/Size	2 / Gates / BX64	Percent output			
Actual length	54	Amperes - (Coul / Sec)	7.6	6.2	6.2
Heater Make	1039 NEMA	Power Factor	1.0	1.0	79.0
Heaters Size	Size 1	Voltage	460	459	459
Starter Location					
		Reheat Coil			
Number of Filters	2	Airflow Delta P			
Filter size	20 X 20 X 2	Water Flow			
MERV Rating	10	Gpm			
Number of Filters		Delta P			
Filter size		Face /Bypass Position			
MERV Rating		Cooling Coil			
		Airflow Delta P			0.4400
Power Factor	0.79	Water Flow			
Misc. Notes		Gpm			
		Delta P			
Interlocked with E-8 (Retu	rn Fan)	Reclaim Coil			
		Airflow Delta P			
		Water Flow			
		Gpm			
		Delta P			

2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on @\_@12\_P@f@rmed By Christopher.braun@abcmws.com



			Air Flow	Rates			1	Damper	Position	s		Supply I	an S -	6	1	Return	Fan E	-8															
Date and Conditions	Supply Air		Return	Air	Out	side Air		Outside	Return	Exhaust	Motor / Fan RPM	AMDS	LI-7	DDC	Motor / Fan RPM	AMDS	LI-7	DDC	1	2	3	4	5	6	7	8	9	10	12	13	13	14	14
Conditiona	Dis. Duct Traverse	AFMS	Inlet Duct	AFMS	Inlet Duct	AFMS		Air	Air	Air	Fan RPM	AWIF 3	T12	Output	Fan RPM	AWF 3	T12	Output															
4/25/2022 S - 6 &	10067	None	4253	None	10067	NA	DDC	15 PSI			1785	7.5, 8.5,		ON	1775	2.2, 2.2	co o	On	4.40	-0.645	0.50	0.405	NA	NA	1.343	4 074	0.405	4 000	-0.4386	0 4007	No place	0.0674	4253
E-8	10007	None	4255	None	10007		Actual	100%	0%	100%	1719	6.5, 7.5	00.0	UN	478	2.1	60.0	Un	-1.12	-0.645	-0.56	-0.425	NA	NA	1.343	1.274	0.125	1.222	-0.4300	0.4097	to traverse	0.0674	4253
							DDC																										
							Actual																										
							DDC																										
							Actual																										

E - 8 Penthouse Duct Traverse

		DUCT TRAVERSE READINGS
DATE	5/4/2022	ZONE TOTALS

BUILDING NAME Elvehjem Arts

PROJECT

SYSTEM

2022 Building Survey

S - 6 AREA SERVED Main Ducts

Area	Duct	Area	Des	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
AHU S-6 Supply	26 X 20	3.61			0.7112	1539	5558	ВС Н - 7
AHU S-6 Supply	12 X 12	1.00			0.3128	820	820	ВС Н -12
AHU S-6 Supply	26 X 14	2.53			1.046	1460	3690	ВС Н -12
							10067	Total for AHU S - 6 10067
E - 8 Return / Relief for AHU S - 6	26 x 22	3.97		8,400	0.0674	1071	4253	Traverse Taken in Penthouse 4/28/2022
E - 8 Return / Relief for AHU S - 6	22 x 32	4.89		8,400	0.4097	0	0	No Traverse taken at the unit in Room 227 at Discharge
					0.3423			Pressure Drop in the Chase
							<del>-4,253</del>	CFM Lose
								Measured Difference between S-7 & E-4 -4253 CFM

Date	5/4/2022	Contact Pe
Building Name	Elvehjem	Problem
Building Number	0544	
ABC Work Order #	0108	UW Asset
Phase	010	
		Tes
Fan ID	AHU S-7	
Location	Mech Room 510	Supply CF
ABC Unit Number	0544 - 020	Return Air
Service	Serves 1 and 2 South & North	Outside Ai
Fan Manufacturer	Trane	Design Ex
Model #	M - 21	Outside Ai
Serial #	K116683	Fan RPM
Type / Class	FC / I	Motor RPN

Type / Class	FC	/
Arrangement	Horizontal [	Draw Thru
Motor Manufacturer	BALC	OR
Model #	EM33	11T
Serial #	F04010	91013
Horsepower	7.5	5
Volts / Phase / Hz	460	/ 3 / 60
Full Load Amps	10	)
RPM	176	60
Frame / Service Factor	213T	1.15
Efficiency	919	%
Motor Sheave Make	Brow	ning
Motor Sheave Info	6.9	7/8
Actual Diameter	6.9	9
Fan Sheave Make	Brow	ning
Fan Sheave Make	6.5	7/8
Actual Diameter	6.5	5
Center distance	22.	5
# Belts/ Make/Size	2 / Gates	s / B64
Actual length	64	
Heater Make	1039 N	IEMA
Heaters Size	Size	e 1

Number of Filters	10
Filter size	24 X 24 X 2
MERV Rating	10
Number of Filters	
Filter size	
MERV Rating	

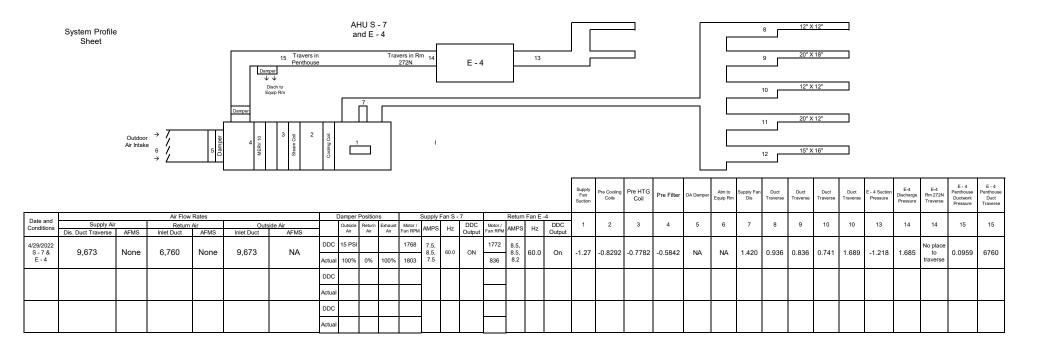
Starter Location

Interlocked with E-4 (Return Fan)

There are balancing volume dampers in nearly every branch of this unit.

Contact Pers	son	Micha	ael J. Wimmer,	PF					
Problem	5011		ssure and Hum						
		Danangrio							
UW Asset N	umber	112207							
		1991 Report 2022 Surve							
Test	Data	Design	As Found	As Left					
			Actual	Actual					
Supply CFM		9,700	0	9,673					
Return Air C	FM	8,400	0	0					
Outside Air	CFM	1,300	0	9,673					
Design Exha		1,300	0	6,760					
Outside Air I	Percentage	14%	13%	13%					
Fan RPM		911	802	1803					
Motor RPM		1780	1769	1768					
Static Press		0.0	-0.69	-1.268					
Static Press	ure Out	0.0	0.42	1.420					
Total System		1.0	1.11	2.688					
External Sta	tic Pres	2.12	1.50	1.9052					
Outside Air I		100%	100%	100%					
Return Air D		0%	0%	0%					
Exhaust Air	Damper	100%	100%	100%					
r									
Outside Air		-3.0	-8	42					
Return Air T		77.0	68	72					
Mixed Air Temp		67.0	63	42					
(RAT-MAT)/	(RAT-OAT	13%	7%	100%					
Frequency D		00.0		00.0					
Displayed H		60.0	60.0	60.0					
Percent outp		7.0	0.4	7.0					
Amperes - (		7.6	6.4	7.8					
Power Facto	DI	1.0	1.0 458	0.79 484					
Voltage		460	458	484					
Reheat Coil									
Airflow	Delta P								
Water Flow									
Valer FIUW	Gpm								
	Delta P								
Face /Bypas									
Cooling Coil									
Airflow	Delta P			0.4388					
Water Flow				0.4000					
	Gpm								
<u> </u>	Delta P								
Reclaim Coi									
Airflow	Delta P								
Water Flow									
	Gpm								
	Delta P								
L			1						

2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on & 2022 ABCMSW April Survey of Elvehjem Arts Building - Survey of Elvehjem Arts Building - Survey April Survey April Survey April Survey of Elvehjem Arts Building - Survey April Survey April



		DUCT TRAVERSE READINGS
DATE	5/4/2022	ZONE TOTALS

BUILDING NAME Elvehjem Arts

PROJECT SYSTEM 2022 Building Survey

AHU S - 7 & E - 4 AREA SERVED Main Ducts

Area	Duct	Area	Do	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
AHU S-7 Supply South Zone 30	12 x 12	1.00	, clocky	CIM	0.9363	907	907	
AHU S-7 Supply South Zone 29	20 x 18	2.50			0.8364	1646	4115	
AHU S-7 Supply South Zone 28	12 x 12	1.00			0.7406	928	928	
AHU S-7 Supply South Zone 27	20 x 12	1.67			1.689	1074	1791	
AHU S-7 Supply South Zone 29	15 x 16	1.67			1.4195	1160	1934	
								Total for AHU S - 7 9673
E - 4 Return / Relief for AHU S - 7	24 x 32	5.33		8,400	0.0959	1268	6760	Traverse Taken in Penthouse 4/28/2022
E - 4 Return / Relief for AHU S - 7	22 x 32	4.89		8,400	1.685	0	0	No Traverse taken at the unit in Room 272N at Discharge
					1.5891			Pressure Drop in the Chase
							<del>-6,760</del>	CFM Lose
								Measured Difference between S-7 & E-4 2913 CFM

Note: The suction pressure of E - 4 was really high. It was -1.218" of H2O.

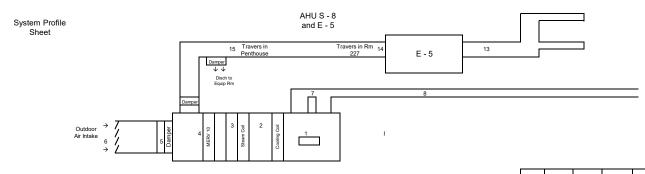
2022 АВСКІЗКІ АР	in Sulvey of	Livenjeni A	ts Building - Summary on 0_22		
Date	5/4/2	2022	Contact Person		
Building Name	Elvel	njem	Problem	E	
Building Number	05	44			
ABC Work Order #	01	08	UW Asset Number		
Phase	01	0			
<u></u>					
			Test Data		
Fan ID	AHU	S-8			
Location	Mech Ro	om 510	Supply CFM		
ABC Unit Number	0544	- 019	Return Air CFM		
Service	Serve	s 160	Outside Air CFM		
Fan Manufacturer	Tra	ine	Design Exhaust CFM		
Model #	M -	14	Outside Air Percentage		
Serial #	K116	684	Fan RPM		
Type / Class	FC	/	Motor RPM		
Arrangement	Horizontal	Draw Thru			
Motor Manufacturer	BALDOR		Static Pressure In		
Model #	EM3218T		Static Pressure Out		
Serial #	F0401223443		Total System SP		
Horsepower	5.	0	External Static Pres		
Volts / Phase / Hz	460	/ 3 / 60			
Full Load Amps	6.	5	Outside Air Damper		
RPM	17	50	Return Air Damper		
Frame / Service Factor	184T	1.15	Exhaust Air Damper		
Efficiency	89.	5%			
Motor Sheave Make	Brow	ning	Outside Air Temp		
Motor Sheave Info	6	7/8	Return Air Temp		
Actual Diameter	5.	9	Mixed Air Temp		
Fan Sheave Make	Brow	ning	(RAT-MAT)/ (RAT-OAT		
Fan Sheave Make	8	7/8			
Actual Diameter	7.	9	Frequency Drive Manu.		
Center distance	2	4	Displayed Htz		
# Belts/ Make/Size	1 / Gate	es / B68	Percent output		
Actual length	6	8	Amperes - (Coul / Sec)		
Heater Make	1039 N	NEMA	Power Factor		
Heaters Size	Siz	e 1	Voltage		
Starter Location					
			Deheat Cail	_	

Number of Filters	6
Filter size	20 X 20 X 2
MERV Rating	10
Number of Filters	
Filter size	
MERV Rating	

otes

Interlocked with E-5 (Return Fan)

Contact Per	son	Minha	ol   \//imme-	DE
Problem	5011		ael J. Wimmer, ssure and Hum	
UW Asset N	umber		112206	
	umber		112200	
			1991 Report	2022 Survey
Test	Data	Design	As Found	As Left
1000	Dulu	Design	Actual	Actual
Supply CFM	1	5,725	0	5014
Return Air C	FM	5,550	0	0
Outside Air		175	0	5,014
Design Exha		175	0	3,925
Outside Air		14%	13%	13%
Fan RPM		925	912	1275
Motor RPM		1780	1769	1775
Static Press	ure In	0.0	-0.66	-1.009
Static Press		0.0	0.41	1.321
Total Syster		1.0	1.07	2.330
External Sta		1.95	1.50	1.9052
Outside Air	Damper	100%	100%	100%
Return Air D		0%	0%	0%
Exhaust Air		100%	100%	100%
	•		I	
Outside Air	Temp	-3.0	-8	42
Return Air T		77.0	68	72
Mixed Air Te		67.0	63	42
(RAT-MAT)/	(RAT-OAT	13%	7%	100%
			·	
Frequency D				
Displayed H		60.0	60.0	60.0
Percent outp	out			
Amperes - (		5.2	4.9	5.6
Power Facto	or	1.0	1.0	0.80
Voltage		460	459	484
-				
Reheat Coil				
Airflow	Delta P			
Water Flow	-			
	Gpm			
	Delta P			
Face /Bypas				
Cooling Coil				
Airflow	Delta P			0.3000
Water Flow	-			
	Gpm			
<b>D</b>	Delta P			
Reclaim Coi				
Airflow	Delta P			
Water Flow				
	Gpm			
	Delta P			



																			Supply Fan Suction	Pre Cooling Coils	Pre HTG Coil	Pre Filter	OA Damper	Atm to Equip Rm	Supply Fan Dis	Duct Traverse						E - 5 Penthouse Ductwork Pressure	E - 5 Penthouse Duct Traverse
Date and Conditions	Supply Air		Air Flow Return	Air		side Air		Damper Outside Air				Supply		- 8 DDC Output	Motor /		Fan E - Hz		1	2	3	4	5	6	7	8			13	14	14	15	15
4/29/2022	Dis. Duct Traverse		Inlet Duct	AFMS	Inlet Duct		1	15 PSI	-	~		5.9,			1765	2.2,																	
S - 8 & E - 5	5,014	None	3,925	None	5,014	NA	Actual	100%	0%	100%	1275		60.0	ON	593	2.0 2.0	60.0	On	-1.01	-0.709	-0.4109	-0.5842	NA	NA	1.321	1.183			-0.4585	0.4358	3357	0.2213	3925
							DDC																										
							Actual																										
							DDC																					l					
							Actual									1																	

DATE

#### DUCT TRAVERSE READINGS ZONE TOTALS

BUILDING NAME Elvehjem Arts

**PROJECT**2022 Building Survey

5/4/2022

SYSTEMAHU S - 8 & E -5AREA SERVEDMain Ductwork

Area	Duct	Area	Des	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
AHU S-8 Supply	26 x 21	3.79			1.1825	1322	5014	
E - 5 Return / Relief for AHU S - 8		3.36		8,400	0.2213	1168	3925	Traverse Taken in Penthouse 5/3/2022
E - 5 Return / Relief for AHU S - 8	22 x 22	3.36		8,400	0.3823	999	3357	No Traverse taken at the unit in Room 247 at Discharge
					0.161			Pressure Drop in the Chase
							-567	CFM Lose

Date	5/4/2022
Building Name	Elvehjem
Building Number	0544
ABC Work Order #	0108
Phase	010

AHU S-9

Fan ID

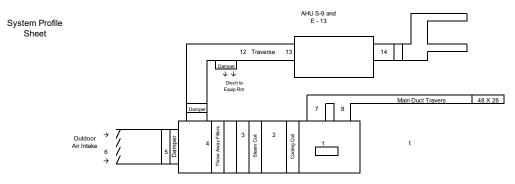
Contact Person	Micha	ael J. Wimmer	. P.E.
Problem		ssure and Hur	
	Banang Pro		
UW Asset Number		112199	
		1991 Report	2022 Survey
Test Data	Design	1991	As Left
		Actual	Actual
Supply CFM	10,800	0	9,013
Return Air CFM	10,100	0	0
Outside Air CFM	700	0	9,013
Design Exhaust CFM		0	5,760
Outside Air Percenta		13%	13%
Fan RPM	1025	1001	1775
Motor RPM	1780	1755	1778
Static Pressure In	0.0	-0.98	-1.482
Static Pressure Out	0.0	0.58	1.514
Total System SP	2.0	1.56	2.996
External Static Pres	1.00	1.68	2.054
		1	
Outside Air Damper	100%	100%	100%
Return Air Damper	0%	0%	0%
Exhaust Air Damper	100%	100%	100%
		-	
Outside Air Temp	-3.0	-8	42
Return Air Temp	77.0	68	72
Mixed Air Temp	67.0	63	42
(RAT-MAT)/ (RAT-O	DAT 13%	7%	100%
Frequency Drive Ma			
Displayed Htz	60.0	60.0	60.0
Percent output	00.0	00.0	00.0
Amperes - (Coul / Se	ec) 12.5	10.2	10.5
Power Factor	1.0	1.0	0.80
Voltage	460	458	483
1 Ollago	+00	-50	-00
Reheat Coil			
Airflow Delta P			0.0458
Water Flow			0.0400
Gpm			
Delta P			
Face /Bypass Positio	on		
Cooling Coil			
Airflow Delta P			0.4833
Water Flow			0.1000
Gpm			
Delta P	1	ł	<u> </u>
Delta P Reclaim Coil			
Reclaim Coil			
Reclaim Coil			
Reclaim Coil Airflow Delta P			

LocationMech Room 510ABC Unit Number0544 - 016ServiceServes L130, L140 & L150Fan ManufacturerTraneModel #M -21Serial #K116685Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #EM3313TSerial #F0402121839Horsepower10.0Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215TI.15EfficiencyMotor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeFan Sheave Make6.00Fan Sheave MakeBrowningFan Sheave Make6.00Fan Sheave Make1/ Gates / B55Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1Starter Location5		
ServiceServes L130, L140 & L150Fan ManufacturerTraneModel #M -21Serial #K116685Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #EM3313TSerial #F0402121839Horsepower10.0Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215TI.15EfficiencyBaltor6.0Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.95.9Fan Sheave MakeBrowningFan Sheave MakeBrowningFan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.95.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Location	
Fan ManufacturerTraneModel #M -21Serial #K116685Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #EM3313TSerial #F0402121839Horsepower10.0Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215T1.15EfficiencyBfliciency81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.95.9Fan Sheave Make6.00Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	ABC Unit Number	0544 - 016
Model #M -21Serial #K116685Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #EM3313TSerial #F0402121839Horsepower10.0Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215T1.15EfficiencyBaltor81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.95.9Fan Sheave MakeBrowningFan Sheave Make6.00Fan Sheave Make6.00Fan Sheave Make5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Service	Serves L130, L140 & L150
Serial #K116685Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #EM3313TSerial #F0402121839Horsepower10.0Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215T1.15EfficiencyBaltor81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.95.9Fan Sheave MakeBrowningFan Sheave Make6.00Fan Sheave MakeBrowningFan Sheave Make6.00Fan Sheave Make5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Fan Manufacturer	
Type / ClassFC / IArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #EM3313TSerial #F0402121839Horsepower10.0Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215T215T1.15Efficiency81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.95.9Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.92.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Model #	M -21
ArrangementHorizontal Draw ThruMotor ManufacturerBaldorModel #EM3313TSerial #F0402121839Horsepower10.0Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215T1.15EfficiencyBeficiency81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeFan Sheave Make6.00Fan Sheave Make5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1		K116685
Motor ManufacturerBaldorModel #EM3313TSerial #F0402121839Horsepower10.0Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215T1.15EfficiencyBefficiency81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeFan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Type / Class	FC / I
Model #EM3313TSerial #F0402121839Horsepower10.0Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215T1.15EfficiencyBill Load Amps81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual DiameterFan Sheave MakeBrowningFan Sheave Make6.00Fan Sheave Make6.00Fan Sheave Make5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Arrangement	Horizontal Draw Thru
Serial #F0402121839Horsepower10.0Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215T1.15Efficiency81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Motor Manufacturer	Baldor
Horsepower10.0Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215T1.15Efficiency81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Model #	EM3313T
Volts / Phase / Hz460 / 3 / 60Full Load Amps12.9RPM1780Frame / Service Factor215T1.15Efficiency81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Serial #	F0402121839
Full Load Amps12.9RPM1780Frame / Service Factor215T1.15Efficiency81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeBrowningFan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Horsepower	10.0
RPM1780Frame / Service Factor215T1.15Efficiency81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Volts / Phase / Hz	460 / 3 / 60
Frame / Service Factor215T1.15Efficiency81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Full Load Amps	12.9
Efficiency81.7%Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	RPM	
Motor Sheave MakeBrowningMotor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Frame / Service Factor	
Motor Sheave Info6.07/8Actual Diameter5.9Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Efficiency	81.7%
Actual Diameter5.9Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual DiameterActual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Motor Sheave Make	Browning
Fan Sheave MakeBrowningFan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Motor Sheave Info	6.0 7/8
Fan Sheave Make6.007/8Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Actual Diameter	5.9
Actual Diameter5.9Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Fan Sheave Make	Browning
Center distance26# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Fan Sheave Make	6.00 7/8
# Belts/ Make/Size1 / Gates / B55Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Actual Diameter	
Actual length55Heater Make1039 NEMAHeaters SizeSize 1	Center distance	-
Heater Make1039 NEMAHeaters SizeSize 1	# Belts/ Make/Size	1 / Gates / B55
Heaters Size Size 1		
	Heater Make	1039 NEMA
Starter Location	Heaters Size	Size 1
	Starter Location	

Number of Filters	10
Filter size	20 X 20 X 2
MERV Rating	10
Number of Filters	
Filter size	
MERV Rating	

Misc. Notes

Interlocked with E-13 (Return Fan)



																			Supply Fan Suction	Pre Cooling Coils	Pre HTG Coil	Pre Filter	OA Damper	Atm to Equip Rm	Supply Fan Dis	Supply Fan Dis		E-13 Equip Rm Traverse		E - 1 3 Suc Pressure
Date and			Air Flow	Rates				Damper	Position	IS		Supply I	Fan S -	9		Return F														
Conditions	Supply Air		Return	Air	Outs	ide Air			Return	Exhaust	Motor / Fan	AMPS	L7	DDC	Motor / Far RPM		<b>U</b> 7	DDC Output	1	2	3	4	5	6	7	8	12	13	13	14
Conditions	Dis. Duct Traverse	AFMS	Inlet Duct	AFMS	Inlet Duct	AFMS		Air	Air	Air	RPM	AIVIE 3	112	Output	RPM	AIVIE 3	ΠZ	Output												
4/22/2022	9013	None	5760	None	NA	NA	DDC	15 PSI			1778		60.0	ON	1775	3.5, 3.5,	60.0	On	1 490	-0.9987	0.0520	-0.5398	NA	NA	1.514	1.305	5760	0.0202	0.1000	-0.9392
S-9 & E -13	9013	None	5700	NONE	NA	NA.	Actual	100%	0%	100%	1775		00.0	ON	472	3.5	00.0	On	-1.402	-0.9967	-0.9529	-0.5596	INA	INA	1.514	1.305	5760	-0.9392	0.1000	-0.9392
							DDC																							
							Actual																						1	
							DDC																						1	
							Actual																						i i	

DATE

# DUCT TRAVERSE READINGS ZONE TOTALS

**BUILDING NAME** Elvehjem Arts

PROJECT 2022 Building Survey

5/4/2022

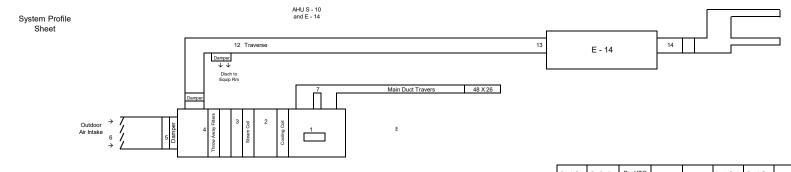
SYSTEM

AHU - S -9 & E - 13 AREA SERVED Main Ducts

Area	Duct	Area		sign		Actual							
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM						
AHU S-9 Supply	48 X 26	8.67			1.3802	1040	9013	Supply Air Total 9013 CFM					
E - 13 Return / Exhaust (In Penthouse) Serves S - 9	48 x 20	6.67			-0.9289	864	5760	Exhaust Air Total 5760 CFM					
								Measured Difference between S-9 & E-13 3253 CFM					

Date	5/4/2022	Contact Pe	rson	Mich	ael J. Wimmer,	P.E.					
Building Name	Elvehjem	Problem		Building Pressure and Humidity Control							
Building Number	0544										
ABC Work Order #	0108	UW Asset I	Number		112208						
Phase	010				112200						
		ļ			1991 Report 2022 Surv						
		Test	Data	Design	As Found	As Left					
Fan ID	AHU S-10				Actual	Actual					
Location	Mech Room 510	Supply CFN	N	7,600	0	8,057					
ABC Unit Number	0544 - 016	Return Air (		7,000	0	0					
Service	Serves L160	Outside Air		600	0	8,057					
Fan Manufacturer	Trane	Design Exh		600	0	4,457					
Model #	M - 17		Percentage	14%	13%	13%					
Serial #	K116686	Fan RPM		880	744	2052					
Type / Class	FC/I	Motor RPM		1780	1760	1785					
Arrangement	Horizontal Draw Thru										
Motor Manufacturer	BALDOR	Static Press	sure In	0.0	-1.10	-1.227					
Model #	EM3311T	Static Press		0.0	0.53	1.687					
Serial #	F0401090959	Total Syste		2.22	1.63	2.91					
Horsepower	7.5	External St		1.00	0.80	2.08					
Volts / Phase / Hz	460 / 3 / 60	External of		1.00	0.00	2.00					
Full Load Amps	10.3	Outside Air	Damper	100%	100%	100%					
RPM	1775	Return Air I		0%	0%	0%					
Frame / Service Factor		Exhaust Air		100%	100%	100%					
Efficiency	91%		Bampor	10070	10070	10070					
Motor Sheave Make	Browning	Outside Air	Temn	-3.0	-8	42					
Motor Sheave Info	6.9 7/8	Return Air		77.0	68	72					
Actual Diameter	6.9	Mixed Air T		67.0	63	42					
Fan Sheave Make	Browning		/ (RAT-OAT	13%	7%	100%					
Fan Sheave Make	6.00 7/8			1070	170	10070					
Actual Diameter	6	Frequency	Drive Manu								
Center distance	21	Displayed H		60.0	60.0	60.0					
# Belts/ Make/Size	1 / Gates / BX 63	Percent out		0010	00.0	00.0					
Actual length	63		(Coul / Sec)	10.3	9.3	9.6					
Heater Make	1039 NEMA	Power Fact		1.0	1.0	0.79					
Heaters Size	Size 1	Voltage		460	459	484					
Starter Location	0120 1	vonage		100	100	101					
		Reheat Coi	1								
Number of Filters	10	Airflow	Delta P			0.1385					
Filter size	24 X 24 X 2	Water Flow				0.1000					
MERV Rating	10		Gpm								
Number of Filters			Delta P								
Filter size		Face /Bypa									
MERV Rating		Cooling Co									
		Airflow	Delta P			0.4441					
		Water Flow				0.4441					
Mise Notes			Gpm								
Misc. Notes			Delta P								
Interleaked with E 11 (D-1	urn Fon)	Reclaim Co									
Interlocked with E-14 (Ret	um ran)	Airflow	Delta P								
		Water Flow									
		Water FIOW	1		+						
			Gpm Dolta D								

Delta P



											Supply Fan Suction	Pre Cooling Colls	Pre HTG Coil	Pre Filter	OA Damper	Atm to Equip Rm	Supply Fan Dis		E-14 Equip Rm Traverse	E-14 Equip Rm Traverse	E-1 4 Dis Pressure	E - 1 3 Suc Pressure								
Date and			Air Flow	Rates				Damper	Positio	ns		Supply I	Fan S - 10			Return I	Fan E -14												í	
Conditions	Supply Air		Return			side Air		Outside	Return	Exhaust	Motor / Fan RPM	AMPS	Hz	DDC Output	Motor / Fan RPM	AMPS	Hz	DDC Output	1	2	3	4	5	6	7		12	13	13	14
	Dis. Duct Traverse	AFMS	Inlet Duct	AFMS	Inlet Duct	AFMS		Air	Air	Air	Fan RPM	/	112	Output	RPM	/ 0	THE.	Output											I	
4/22/2022 S-10 & E -	8075	None	4457	None	NA	NA	DDC	15 PSI			1785	9.5	60.0	ON	1769	2.0,	60.0	On	-1.227	-0.783	0.644	-0.397	NA	NA	1.687		4457	0.0701	0.4540	-0.5298
14	8075	None	4457	None	INA	INA	Actual	100%	0%	100%	2052	9.8, 9.5	60.0	UN	441	1.9, 1.8	60.0	Un	-1.227	-0.763	-0.044	-0.397	NA	NA	1.007		4457	0.0721	0.1516	-0.5296
							DDC																							
							Actual																					ſ	ł	
							DDC																							
							Actual																					ľ	l	

Т

#### DUCT TRAVERSE READINGS 5/4/2022

**BUILDING NAME** Elvehjem Arts

PROJECT 2022 Building Survey

SYSTEM

AHU S - 10 AREA SERVED Main Ducts

Area	Duct	Area	Des	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
AHU S-10 Supply	34 X 20	4.72			0.708	1710	8075	Supply Air Total 8075 CFM
E - 14 Return / Exhaust (In Penthouse)	22 x 22	3.36			0.0721	1326	4457	Exhaust Air Total 4457 CFM
								Measured Difference between S - 10 & E -14 3618 CFM

Date	5/4/	2022	Contact Pe	erson	Michael J V	Vimmer, PE	
Building Name		hjem	Action item			Viinnion, r E	
Building Number		644	7 totion item				
ABCMWS WO #		08				<u>I</u>	
Phase		10	†				
UW Asset Number		2194	112	195	112	188	
					112100		
Fan ID	E	- 1	E	- 2	E - 3		
Location	Room 207		Roor	n 207	Room	272 N	
UW PM #	N	A	N	IA	N	A	
Service	AHU S-	5 Ret / Exh	AHU S -	1 Ret / Exh	AHU S-2	2 Ret / Exh	
Manufacture	Dreyer D	Dynamics	Dreyer D	Dynamics	Dreyer D	Dynamics	
Model #	T.(	0.2	24	40	30	00	
Serial #	73	02	73	312		09	
Type/ Class	FC	: / 1	FC	; / 1	NA	/ 1	
Motor Make/ Style	Dayton	/ Open	Baldor	/ Open	Cer	ntury	
Model #		304		116T	6-3114		
Serial #	N	A	F0702	224022	NA		
Horse Power	2	.0	1	.0	1	.5	
Volts / Phase / Hertz	460	/3/60	460	/3/60	460	/3/60	
Full Load Amps / SF	2.9	1.15	1.5	1.15	2.5	1.15	
RPM	17	'35	17	65	17	45	
Frame / Power Factor	145T	0.77	143T	0.71	145T	1.0	
Efficiency		5%	87.50%			5%	
Motor Sheave Make		g- 2AK39	Browning - AK34 H H7/		Brow	vning	
Dia / Bore	2AK39	0.875	2AK34	0.875	3.4"	NA	
Actual Diameter	-	.7		.3	3.4		
Fan Sheave Make	Brov	vning	Unknown		Unknown		
Dia / Bore	12.0	1.9375	QBA82B86		9.5"	NA	
Actual Diameter		1.8		.6		.4	
Center to Center Distance		51		3.5		<u>ð.5</u>	
# of belts / Make / Size		s / AX 85		s / AX64		s / AX 71	
Actual belt Length	8	5	6	64	26	6.5	
Heater Make							
Heater Size							
Starter Location							
	Size 330 /	CEM 8400	Size 240 /	CEM 4300	Size 300 /	CFM 655	
Additional Information		A-PH 1.6		A-PH .81		A-PH 1.23	
from the original		) / Class 1		/ Class 1	RPM 70		
Manufactures Tag					Const STD.		
manulaciules lay	Const STD.						

	Design	Actual	Design	Actual	Design	Actual
		2022 Survey		2022 Survey		2022 Survey
Fan Total CFM	8400	5,989	4300	2,835	6550	3,194
Inlet CFM						
Fan RPM	500	488	660	756	555	546
Motor RPM		1730	1730	1768	1720	1775
Freq. Drive Hz	60	60	60	60	60	60
Static Pressure In		-0.3911		-0.6385		-0.3518
Static Pressure Out		0.3842		0.3214		0.4554
Inlet VP						
Fan Delta P						
System SP Delta P		0.7753		0.9599		0.8072
Voltage		484	440	484	440	484
Amperage		2.7		1.65		2.4
Amperage		2.8		1.60		2.4
Amperage		2.9		1.65		2.4
Average Amps		2.8	1.8	1.63	2.3	2.4

2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on 6\_22\_2022

## DATE5/4/2022DUCT TRAVERSE READINGSZONE TOTALS

BUILDING NAME Elvehjem Arts

PROJECT

2022 Building Survey

 SYSTEM
 E - 1, E - 2 and E - 3
 AREA SERVED
 Main Ductwork

Area	Duct	Area	Des			Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
E - 1 Return / Relief for AHU S - 5	28 x 22	4.28		8,400	0.0943	1400	5989	Traverse Taken in Penthouse 4/28/2022
E - 1 Return / Relief for AHU S - 5	22 x 32	4.89		8,400	0.3214	1372	6,708	Traverse taken at the unit in Room 227
					0.2271			Pressure Drop in the Chase
							719	CFM Lose
E - 2 Return / Relief for AHU S - 1	20 x 20	2.78		4,300	0.1674	1021	2,835	Traverse Taken in Penthouse 4/28/2022
E - 2 Return / Relief for AHU S - 1	20 x 20	2.78		4,300	0.33	977	2,714	Traverse taken at the unit in Room 227
					0.1599			Pressure Drop in the Chase
							-121	CFM Lose
E - 3 Return / Relief for AHU S - 2	20 x 20	2.78		6,550	0.05	1150	3,194	Traverse Taken in Penthouse 4/28/2022
E - 3 Return / Relief for AHU S - 2	20 x 20	2.78		6,550	0.4554		3,194	No place to Traverse the unit in Room 272N
					0.4054			Pressure Drop in the Chase
							0	CFM Lose

Date	5/4/	2022	Contact Pe	rson	Michael J.	Wimmer, PE	
Building Name		ehjem	Action item		inicitael e.		
Building Number		544					
ABCMWS WO #		108					
Phase		100					
UW Asset Number		2189	11	2190	11	2191	
	114	2100		2100	112101		
Fan ID	E	- 4		- 5	E - 6		
Location	Roon	n 272N	Roo	m 247	Roo	m 247	
UW PM #	-	NA		NA	-	NA	
Service	AHU S-	7 Ret / Exh	AHU S-	8 Ret / Exh	AHU S-	3 Ret / Exh	
Manufacture		Dynamics	Dreyer	Dynamics		Dynamics	
Model #		C. 2		C. 2	T.	C. 2	
Serial #	7:	307	7	829			
Type/ Class		own / 1	-	own / 1	Unkn	own / 1	
Motor Make/ Style	Baldor	r / Open	Baldo	r / Open	Baldo	r / Open	
Model #	EM3	3311T	EM	31547			
Serial #	F1008	181615	FC508	054166?			
Horse Power	7.5			1.5	1.0		
Volts / Phase / Hertz	460	/3/60	460	/3/60	460	/3/60	
Full Load Amps / SF	9.7	1.15	2.1	1.15	1.35	1.15	
RPM	1	770	1	740	1	745	
Frame / Power Factor	213T	1.0	145T	1.0	N143T	1.0	
Efficiency	91	.0%	86	6.5%	82	2.5%	
Motor Sheave Make	Brov	wning	Bro	wning	Bro	wning	
Dia / Bore	2AK61H	H 1 - 3/8	3.2	0.625	3.75	0.625	
Actual Diameter	6	6.0	:	3.2	:	3.7	
Fan Sheave Make	Brov	wning	Bro	wning	Browning		
Dia / Bore	12.0	SK 1-15/16	8.5	SK 1-15/16	9	SK 1-15/16	
Actual Diameter	1	1.8	8	3.4	8	3.9	
Center to Center Distance	32	.125	2	5.5	2	5.5	
# of belts / Make / Size			2-Gate	s- BX 68	2-Gate	s- BX 68	
Actual belt Length	U,	91		68		68	
Heater Make							
Heater Size							
Starter Location							
	0: 000		0: 070		0: 070		
Size 330 / CFM 8400				/ CFM 5500		CFM 4900	
Additional Information SP 0.75 / A-PH 1.6 from the original RPM 500 / Class 1				A-PH 1.08		/ A-PH .88	
from the original				8 / Class 1		7 / Class 1	
Manufactures Tag	Const STD	. Temp STD	Const STD	. Temp STD	Const STD	. Temp STD	
	Design	Actual	Design	Actual	Design	Actual	
	-		-		-		

-	Design	Actual	Design	Actual	Design	Actual
		2022 Survey		2022 Survey		2022 Survey
Fan Total CFM	8400	6760	5550	3925	4900	2,374
Inlet CFM						
Fan RPM	500	836	608	546	585	836
Motor RPM	1770	1776	1740	1765	1745	1772
Freq. Drive Hz	60	60	60	60	60	60
Static Pressure In		-1.218		-0.4585		-0.5433
Static Pressure Out		1.685		0.4358		0.2736
Inlet VP						
Fan Delta P						
System SP Delta P		2.903		0.8943		0.8169
Voltage	460	474	460	475	440	475
Amperage		8.5		2.2		1.8
Amperage		8.5		2		1.9
Amperage		8.2		2		1.9
Average Amps	9.7	8.40	2.1	2.07	1.35	1.87

2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on 6\_22\_2022

Work Performed By Christopher.braun@abcmws.com

## 5/4/2022DUCT TRAVERSE READINGS5/4/2022ZONE TOTALS

BUILDING NAME Elvehjem Arts

DATE

SYSTEM

**PROJECT** 2022 Building Survey

E - 4, 5 & 6 AREA SERVED Main Ducts

Area	Duct	Area	Des	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
E - 4 Return / Relief for AHU S - 7	24 x 32	5.33		8,400	0.0959	1268	6760	Traverse Taken in Penthouse 4/28/2022
E - 4 Return / Relief for AHU S - 7	22 x 32	4.89		8,400	1.685	0	0	No Traverse taken at the unit in Room 272N at Discharge
					1.5891			Pressure Drop in the Chase
							<del>-6,760</del>	CFM Lose
E - 5 Return / Relief for AHU S - 8	22 x 22	3.36		8,400	0.2213	1168	3925	Traverse Taken in Penthouse 5/3/2022
E - 5 Return / Relief for AHU S - 8	22 x 22	3.36		8,400	0.3823	999	3357	Traverse taken at the unit in Room 247
					0.161			Pressure Drop in the Chase
							-567	CFM Lose
E - 6 Return / Relief for AHU S - 3	20 X 20	2.78			0.0087	855	2374	Traverse Taken in Penthouse 4/28/2022
E - 6 Return / Relief for AHU S - 3	22 X 22	3.36			0.2736	1205	4051	Traverse taken at the unit in Room 247
					0.2649			Pressure Drop in the Chase
							1,677	CFM Lose

Date	5/4/	2022	Contact Per	son	Michael J.	Wimmer, PE	
Building Name		ehjem	Action item				
Building Number		544					
ABCMWS WO #	01	108			1		
Phase		10	-				
UW Asset Number		2193	112	2192	11:	2214	
			1	-	1		
Fan ID	E	- 7	E	- 8	E - 9		
Location	Rooi	m 227	Roor	n 227	Mech	Rm 510	
UW PM #	0544010		054	4009	054	4-045	
Service	AHU S-	4 Ret / Exh	AHU S-	6 Ret / Exh	AHU S-	1 Ret / Exh	
Manufacture	Dreyer I	Dynamics		JA	Dreyer I	Dynamics	
Model #		C 2	T.C	). <b>-</b> 2	Т.С	C 2	
Serial #		311		327		310	
Type/ Class		\/1	NA	A/1	NA	A / 1	
Motor Make/ Style		Open	Baldor	/ Open	Baldor	/ Open	
Model #		3AL202		3157T		116T	
Serial #	25BC02XP		NA		F200		
Horse Power	1	.0	2	2.0	1	.0	
Volts / Phase / Hertz	440	/3/60	460	/3/60	460	/3/60	
Full Load Amps / SF	1.8	1.15	2.7	1.15	1.4	1.15	
RPM	-	730		725		725	
Frame / Power Factor	143T	1.0	145T	1.0	143T	1.0	
Efficiency		0%	100%			00%	
Motor Sheave Make		wning	Browning			wning	
Dia / Bore	2AK39H		2BK35H		3.125	0.875	
Actual Diameter	-	<del>3.8</del>	3.4		3.1		
Fan Sheave Make		wning		wning	Browning		
Dia / Bore		<del>-1-11/16</del>	2 A 120		2A 115		
Actual Diameter		3.5		1.9		1.0	
Center to Center Distance		23	-	29	-	27	
# of belts / Make / Size		s / AX 64		s- BX 85		s- BX 75	
Actual belt Length	6	64	-	35		75	
			Rotation is	Clock Wise			
Heater Make							
Heater Size			-				
Starter Location							
	Size 040 /	CEM 4000	Size 220 /	CFM 7650	Size 200		
Additional Information		CFM 4000			Size 300 / CFM 5600		
				A-PH 1.43	SP 0.50 / A-PH .70 RPM 460 / Class 1		
from the original				3 / Class 1			
Manufactures Tag	CONSL STD	. Temp STD	Const STD.	. Temp STD	CONSUST D	. Temp STD	

	Design	Actual	Design	Actual	Design	Actual
		2022 Survey		2022 Survey		2022 Survey
Fan Total CFM	4000	3,495	7650	4,253	5600	4757
Inlet CFM						
Fan RPM	645	717	508	478	452	486
Motor RPM	1730	1745	1725	1775	1730	1773
Freq. Drive Hz	60	60	60	60	60	60
Static Pressure In		-0.5251		-0.4386		-0.5650
Static Pressure Out		0.5624		0.4097		-0.1739
Inlet VP						
Fan Delta P						
System SP Delta P	0.8	1.0875		0.8483	0.8	0.3911
Voltage	440	484	460	484	440	484
Amperage		1.8		2.2		0.95
Amperage		2.0		2.2		0.9
Amperage		2.0		2.1		0.95
Average Amps	1.8	1.93	2.7	2.17	1.8	0.93

When E -9 is on, the discharge chamber is NEGATIVE (from the Penthouse) to S - 1. ALSO, when E - 9 is OFF, the discharge chamber is still as negative as it was when the fan was on to the Penthouse.

		DUCT TRAVERSE READINGS
DATE	5/4/2022	ZONE TOTALS
_		
BUILDING NA	ME Elvehjem	Arts

2022 Building Survey

PROJECT SYSTEM

CT

E - 7, E - 8 & E - 9 AREA SERVED Main Ducts

Area	Duct	Area	De	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
E - 7 Return / Relief for AHU S - 4	20 X 20	2.78			0.0007	52	3495i	Traverse Taken in Penthouse 4/28/2022 (EF-7 was off)
E - 7 Return / Relief for AHU S - 4	20 X 20	2.78			0.4097	1258	3495	Traverse taken at the unit in Room 227
					<del>0.409</del>			Pressure Drop in the Chase
							######	CFM Lose
E - 8 Return / Relief for AHU S - 6	26 x 22	3.97		8,400	0.0674	1071	4253	Traverse Taken in Penthouse 4/28/2022
E - 8 Return / Relief for AHU S - 6	22 x 32	4.89		8,400	0.4097	0	0	No Traverse taken at the unit in Room 227 at Discharge
					0.3423			Pressure Drop in the Chase
							<del>-4,253</del>	CFM Lose
E - 9 Return /Exh Fan for AHU S - 1	28 X 18	3.50			-0.4879	962	3366	
E - 9 Return /Exh Fan for AHU S - 1	58 X 4	1.61			-0.4458	863	1390	Exhaust Air Total (E-9) 4757 CFM

Date	5/4	1/2022	Contact Pe	rson	Michael J.	Wimmer, PE	
Building Name	Elv	vehjem	Action item				
Building Number	(	)544					
ABCMWS WO #	(	0108					
Phase		010					
UW Asset Number	11	12213	112	2204	11	2202	
Fan ID		- 10	-	- 11		- 12	
Location						- 12 Rm 510	
	Room 510 0544-043		Room 510				
UW PM #		- 2 Ret / Exh	0544-038			4-037 4 Ret / Exh	
Service			AHU S - 3 Ret / Exh				
Manufacture		Dynamics	Dreyer Dynamics T.C 2			Dynamics	
Model #		C 2				C 2	
Serial #		7328		331		313	
Type/ Class		IA / 1	NA / 1			A/1	
Motor Make/ Style		or / Open		/ Open		or / Open	
Model #	M	3112A		581T		3116T	
Serial #		NA	F0502243463		FP511054513		
Horse Power		0.75	1	.0		1.0	
Volts / Phase / Hertz	460	/3/60	460	/3/60	460	/3/60	
Full Load Amps / SF	1.5	1.15	1.4	1.15	1.4	1.15	
RPM		1725	17	750	1	740	
Frame / Power Factor	56	1.0	145T	1.0	143T	1.0	
Efficiency	1	100%	10	0%	1	00%	
Motor Sheave Make	Bro	owning	Browning		Bro	wning	
Dia / Bore	AK 34H	H 5/8	OD 4.0	H 7/8	AK 32	H 7/8	
Actual Diameter		3.3	3.9		3.1		
Fan Sheave Make	Bro	owning	Brov	wning	Bro	Browning	
Dia / Bore	AK 99H	H 1 3/8	OD 9.75	1-15/16	AK125	1-15/16	
Actual Diameter		9.8	9	9.6		2.4	
Center to Center Distance		20.5	2	25	2	8.75	
# of belts / Make / Size	2 / Gat	es / AX 60	2-Gates	s- BX 68	2-Gat	es- A 80	
Actual belt Length		60	6	68		80	
Heater Make							
Heater Size							
Starter Location							
	Size 220	/ CFM 3300	Size 270 /	CFM 4800	Size 330	/ CFM 6800	
Additional Information		/ A-PH .43		A-PH .60		/ A-PH .86	
from the original		65 / Class 1		) / Class 1		0 / Class 1	
		D. Temp STD		. Temp STD		0 / Class 1 ). Temp STD	
Manufactures Tag	CONSUST				Const STL		
	Design	Actual	Design	Actual	Design	Actual	

	Design	Actual	Design	Actual	Design	Actual
		2022 Survey		2022 Survey		2022 Survey
Fan Total CFM	3300	2,854	4800	3797	6800	4,783
Inlet CFM						
Fan RPM	620	1189	512	676	405	388
Motor RPM	1725	1770	1730	1752	1730	1757
Freq. Drive Hz	60	60	60	60	60	60
Static Pressure In		-0.38		-0.7525		-0.6673
Static Pressure Out		-0.05		-0.1257		-0.0571
Inlet VP						
Fan Delta P						
System SP Delta P	0.55	0.33	0.8	0.6268	0.8	0.6102
Voltage	460	484	440	484	440	484
Amperage		0.9				
Amperage		0.9				
Amperage		0.95				
Average Amps	1.4	0.92	1.8	1.4	1.8	1.4

No access to disconnect on E - 11 so I entered the FLA

2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on 6\_22\_2022

DUCT TRAVERSE READINGS ZONE TOTALS

DATE

**BUILDING NAME** Elvehjem Arts

PROJECT 2022 Building Survey

5/4/2022

SYSTEM

 E - 10, E - 11 and E - 12
 AREA SERVED
 Main Duct

Area	Duct	Area	Desi			Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
E - 10 Return /Exh Fan for AHU S - 2	20 X 12	1.67			-0.2631	1033	1722	
E - 10 Return /Exh Fan for AHU S - 2	58 X 4	1.61			-0.2856	703	1132	Exhaust Air Total (E-10) 2854 CFM
E - 11 Return /Exh Fan for AHU S - 3	20 X 16	2.22			-0.3512	1160	2577	
E - 11 Return /Exh Fan for AHU S - 3	58 X 4	1.61			-0.2986	757	1220	Exhaust Air Total (E-11) 3797 CFM
E - 12 Return /Exh Fan for AHU S - 4	28 X 16	3.11			-0.3664	1041	3239	
E - 12 Return /Exh Fan for AHU S - 4	58 X 4	1.61			-0.4051	958	1544	Exhaust Air Total (E-12) 4783 CFM

Date	5/4/	2022	Contact Pe	rson	Michael J.	Wimmer, PE
Building Name		ehjem	Action item			······
Building Number		544				
ABCMWS WO #		108				
Phase	-	10				
UW Asset Number		2200	11	2210	120	0493
Fan ID	E	- 13	E	- 14	E	- 15
Location	Roo	m 510	Roo	m 510	Mech	Rm 510
UW PM #	054	4-035	054	4-040	054	4-041
Service	AHU S-	9 Ret / Exh	AHU S -	10 Ret / Exh	Kitch	en 371
Manufacture	Dryer Dyn	amics Corp	Dryer Dyn	amics Corp		amics Corp
Model #		C 2	T.C	C 2		2 2
Serial #		297		296		359
Type/ Class		A / 1		۹/1		A/1
Motor Make/ Style	Baldor	r / Open	Baldor	r / Open	NO	TAG
Model #		3211T		3154T	NO TAG	
Serial #	F0905143544		F0601061343		NO TAG	
Horse Power	3	.00	-	1.5	1	1.5
Volts / Phase / Hertz	460	/ 3 / 60	460	/3/60	460	/ 3 / 60
Full Load Amps / SF	4	1.15	2.1	1.15	2.1	1.15
RPM		755		740		750
Frame / Power Factor	182T	0.77	145T	1.0	NO TAG	1.0
Efficiency		.2%		6.5%		.5%
Motor Sheave Make		wning	Browning		BROWING	
Dia / Bore	4.0	1.125	NA	H 7/8	2VP42	NA
Actual Diameter		3.1	3.5		4.1	
Fan Sheave Make		wning		wning		WNING
Dia / Bore		SK 1-15/16		SK 1-15/16	2VP38	NA
Actual Diameter		0.5		2.3		3.4
Center to Center Distance		31		31		13
# of belts / Make / Size		es / BX85		es- AX85		ES / AP35
Actual belt Length		87		85		13
Heater Make						
Heater Size						
Starter Location						
	Size 360 /	CEM 10100	Size 330	CFM 7000	Size 90 /	CFM 800
	Size 360 / CFM 10100 SP 0.75 / A-PH 1.9		Size 330 / CFM 7000 SP 0.75 / A-PH 1.25		SP 0.50 / A-PH .14	
Additional Information	SP 0.75	/ A-PH 1.9	SP 0.75 /	A-PH 1.25	SP 0.50	/ A-PH .14
Additional Information from the original		/ A-PH 1.9 ) / Class 1		A-PH 1.25 0 / Class 1		/ A-PH .14 0 / Class 1

	Design	Actual	Design	Actual	Design	Actual
		2022 Survey		2022 Survey		2022 Survey
Fan Total CFM	10100	5,760	7000	4457	600	0
Inlet CFM						
Fan RPM	426	472	465	441	1680	0
Motor RPM		1775		1769		
Freq. Drive Hz	60	60	60	60		
Static Pressure In		-0.9392		-0.5298		
Static Pressure Out		0.1000		0.1587		
Inlet VP						
Fan Delta P						
System SP Delta P		1.0392		0.6885	0.3	0
Voltage	460	482	460	484		484
Amperage		3.5		2.1		
Amperage		3.5		1.9		
Amperage		3.5		1.8		
Average Amps	4.0	3.5	2.1	1.93		0

EF - 14 Relief damper disconnected. Reconnected by balancer - Note from 1991 EF - 15 - It appears the motor is burnt out. No Tag; however, data entered to make Summary sheet function ok

DATE

#### **DUCT TRAVERSE READINGS** ZONE TOTALS 5/4/2022

**BUILDING NAME** Elvehjem Arts

PROJECT

2022 Building Survey

SYSTEM

E - 13, 14 & 15 AREA SERVED Main Ducts

Area	Duct	Area	Design Actual					
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
E - 13 Return / Exhaust (In Penthouse) Serves S - 9	48 x 20	6.67			-0.9289	864	5760	Exhaust Air Total 5760 CFM
E - 13 Return / Exhaust (In Penthouse) Serves S9	48 × 20	<del>6.67</del>			- <del>0.2898</del>	<del>502</del>	<del>33</del> 47	Rotation Changed to CCW to check flows
E - 14 Return / Exhaust (In Penthouse)	22 x 22	3.36			0.0721	1326	4457	Exhaust Air Total 4457 CFM
E-15							0	Fan is off for an unknown reason

Date	5/4/2	2022	Contact Pe	rson	Michael J. V	Vimmer, PE
Building Name	Elve	hjem	Action item			
Building Number	05	44				
ABCMWS WO #	01	08			-	
Phase	0	10				
UW Asset Number	120	470	No Asse	t Number	No Asset	t Number
	•		•			
Fan ID	E -	16	E	· 17	E -	18
Location		n 510	Room 510		Mech F	Rm 510
UW PM #	0544	0544-042		1-036	0544	-039
Service		Shop 101 C		X 126	TR E	X 162
Manufacture		ynamics		Dryer DYNAMICS CORP		yer
Model #	Т.С	C. 2	BIFLO		Т.С	C. 2
Serial #	73	53	7352			49
Type/ Class		/ 1	NA / 1		NA	
Motor Make/ Style		Y / OPEN		/ Open	A O Smi	
Model #	CAT	C403	2N013R		CAT	H850
Serial #	BW1	- 095	R60	069R	BW1	-055
Horse Power	0.	33	0.5		0.5	
Volts / Phase / Hertz	115	/1/60	440	/3/60	460	/3/60
Full Load Amps / SF	6.6	1	2.2	1.25	1.5	1.25
RPM	17	25	17	'25	17	25
Frame / Power Factor	J56	1.0	F56	1.0	LA 56	1.0
Efficiency		5%	86	.5%	86.	5%
Motor Sheave Make	BROV	VNING	Browning		Browning	
Dia / Bore	2VP42	NA	1 VP 40		2 AK44H	
Actual Diameter	4	.1	3	.9	43.0	
Fan Sheave Make	BROV	VNING	N	A	Brov	vning
Dia / Bore	2BK48	NA	4		40	
Actual Diameter	4	.7		4	4	1
Center to Center Distance		4	1	4	14	1.5
# of belts / Make / Size	2/ GATE	S / AX-35	1/G	ates /	1/ Gates	s / AX 40
Actual belt Length	3	5	3	35	4	0
Heater Make						
Heater Size						
Starter Location						
		CFM 600			SIZE 135 /	
Additional Information		A-PH .17		A - PH .35		A - PH .244
from the original		5 / Class 1		/ CLASS 1	RPM 127	/ CLASS 1
Manufactures Tag	Const STD.	Temp STD	CONST ST	D/TEMP STD		

	Design	Actual	Design	Actual	Design	Actual
Fan Total CFM	600	462	1800	1,725	1300	1,299
Inlet CFM						
Fan RPM	1725	1541	1160	1200	1210	1750
Motor RPM		1778		1725		1725
Freq. Drive Hz	60	60	60	60	60	60
Static Pressure In		-0.3951		-0.5300		1.396
Static Pressure Out		0.0500		0.1200		0.1025
Inlet VP						
Fan Delta P						
System SP Delta P	0.3	0.4451		0.6500		-1.2935
Voltage		484	440	484	460	484
Amperage				1.0		1.0
Amperage				1.0		1.0
Amperage				1.0		1.0
Average Amps		6.5		1.0		1.0

EF - 14 Relief damper disconnected. Reconnected by balancer

2022 ABCMSW April Survey of Elvehjem Arts Building - Summary on 6\_22\_2022

DATE

#### DUCT TRAVERSE READINGS ZONE TOTALS

BUILDING NAME Elvehjem Arts

**PROJECT** 2022 Building Survey

5/4/2022

SYSTEME - 16, 17 & 18AREA SERVEDMain Ducts

Area	Duct	Area	Des	sign		Actual		
Served	Size	Sq. Ft.	Velocity	CFM	SP	Velocity	CFM	
E-16	8 X 12	0.67		600	-0.3456	693	462	2022 Survey
E-17	24 x 14	2.33		1,800	-0.4377	739	1,725	2022 Survey
E-18	22 x 8	1.22		1,300	0.1886	1062	1,299	2022 Survey

Date	5/4/2	2022	Contact Pe	rson	Michael J.	Wimmer, PE
Building Name		hjem	Action item			, · <b>L</b>
Building Number		i44				
ABCMWS WO #		08	1		<u>.</u>	
Phase		10	1			
UW Asset Number		Shown	1			
			ļ		1	
Fan ID	TF	- 1				
Location		Room 550				
UW PM#		- 018A	1			
Service	Exhaust f	or skylight				
Manufacture						
Model #						
Serial #						
Type/ Class						
Motor Make/ Style						
Model #						
Serial #						
Horse Power	0.	75				
Volts / Phase / Hertz	120	/1/60				
Full Load Amps / SF						
RPM						
Frame / Power Factor						
Efficiency						
Motor Sheave Make						
Dia / Bore						
Actual Diameter						
Fan Sheave Make						-
Dia / Bore						
Actual Diameter						
Center to Center Distance						
# of belts / Make / Size						
Actual belt Length						
Heater Make					-	
Heater Size						
Starter Location						
Additional Information		-	<u> </u>		+	
from the original		-				
Manufactures Tag		_				
manulaciules lay			I		<u> </u>	
]	Design	Actual	Design	Actual	Design	Actual
	Design	notual	Design	notual	Design	7,01041
Fan Total CFM	5000	4200				1
Inlet CFM		00	1			
Fan RPM	630		1			
Motor RPM	1780		1			
Freq. Drive Hz	60		1			
Static Pressure In			1		1	1
Static Pressure Out			1		1	1
Inlet VP			1			1
Fan Delta P			1			
System SP Delta P	0.25		1			
Voltage	-		1			
Amperage		-	1	1	1	1

0

Amperage Amperage Amperage

Average Amps

#### Diffuser and Grill Test Report

	Air Outl	et Report	
Date	5/4/2022	Project	Elvehjem
Building Name			
Building Number		System_	
Work Order #			
Phase		Area Served	
Contact person	Michael J. Wimmer, P.E.		
Problem			

Area					DesignPreliminaryCFMVelocityVel orCFMCFMCFM							
Served	No.	Type	Size	AK	CFM	Velocity	Vel or	Vel or				
							CFM	CFM				
	· · · · ·			· I								
										ļ	ļ	

#### Diffuser and Grill Test Report

	Air Outlet Report								
Date	5/4/2022	Project	Elvehjem						
Building Name									
Building Number		System_							
Work Order #									
Phase		Area Served							
Contact person	Michael J. Wimmer, P.E.								
Problem									

Area					DesignPreliminaryCFMVelocityVel orCFMCFMCFM							
Served	No.	Type	Size	AK	CFM	Velocity	Vel or	Vel or				
							CFM	CFM				
	· · · · ·			• 								
										ļ	ļ	