



Date: 11/22/21

Performed by: Andrew Tinklenberg

Location: Folwell School – 3611 20th Avenue South, Minneapolis, MN 55407

RE: Radon Testing

INTRODUCTION

From November 15 – 18, 2021, radon testing was performed within Folwell School located at 3611 20th Avenue South in Minneapolis, MN. The testing was performed to ensure that radon gas concentrations within the building are below the established regulatory limits. Testing was conducted under normal occupied building conditions in frequently-occupied ground contact rooms and other areas in accordance with ANSI/AARST Protocols for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings 2014 with 1/21 Revisions and Minnesota Department of Health (MDH) guidelines.

SUMMARY OF FINDINGS

All of the areas that were tested were found to have radon gas levels below 4.0 picocuries per liter of air (pCi/L), which is the EPA and MDH action level. (Note: Spike sampling is performed in conjunction with this testing and Duplicate (side-by-side) sampling was conducted in select areas at a rate of 10% of areas tested, and Rooms “A” & “B” were the blank samples.)

The radon test kits were submitted to and analyzed by AirChek, Inc., 1936 Butler Bridge Rd, Mills River, NC 28759 (MN License #RL-00003). Please refer to the attached AirChek radon testing report and sample diagrams for further information concerning the radon testing, areas that were tested, and the radon levels that were found to be present. Per MDH requirements, this information will be shared with the local regulatory agency (MDH - health.indoorair@state.mn.us, Phone # 651-201-4601) and incorporated in an MPS’ board meeting. The information will also be posted on the EH&S webpage available through the main MPS website and maintained on file by EH&S.

REMARKS

Every effort was made to maintain closed building conditions and HVAC systems are monitored and controlled remotely by MPS Direct Digital Control (DDC) personnel. Any deviation in building conditions or sampling protocol which could have an impact on the testing and test results is described in the summary above. If any unoccupied areas that were not tested are planned for future occupancy, contact EH&S so that the areas can be tested. Unless specified, all QA/QC measurements were within the required limits. Radon testing is to be performed in MPS District buildings every 5 years or any time major renovation activities take place which have the potential to impact the building’s foundation or HVAC systems. Refer to the attached test condition summary and ANSI/AARST advisories for additional information concerning the radon testing.

If you have any questions regarding this information, please feel free to contact me. Thank you,



Andrew Tinklenberg
MDH RMEA-00426
NRPP ID# 111389 RT



Safety Specialist - Environmental Health & Safety
Minneapolis Public Schools
Environmental Health & Safety - Facilities Dept.
1225 N. 7th Street, Minneapolis, MN 55411
andrew.tinklenberg@mpls.k12.mn.us
612-668-0306 Phone
612-668-0310 EH & S General Office
612-668-0275 Fax



Attachments

Radon Testing Results
Floor Plans with Sample Locations
Notification Documents
Test Condition Summary
ANSI/AARST Advisory Statements

I5554 / ANDREW TINKLENBERG / MINNEAPOLIS PUBLIC SCHOOLS

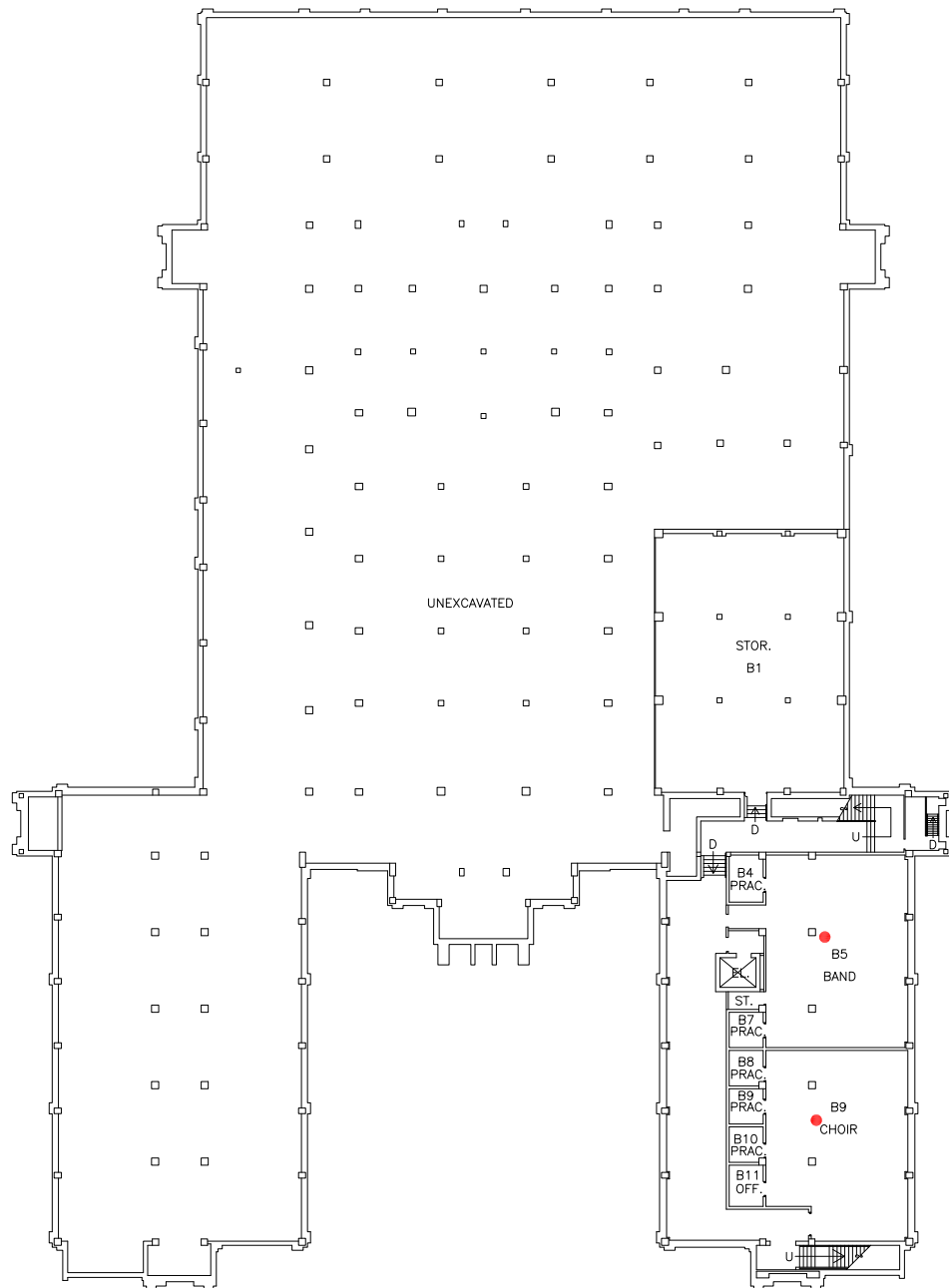
Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
11034892	2021-11-15	7:00 am	2021-11-18	2:00 pm	70	MPS FOLWELL	FOLWELL	CLASS B5	FOLWELL	0	< 0.3
11034893	2021-11-15	7:00 am	2021-11-18	2:00 pm	70	MPS FOLWELL	FOLWELL	CLASS B4	FOLWELL	0	< 0.3
11034894	2021-11-15	7:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 27	FOLWELL	1	< 0.3
11034895	2021-11-15	7:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 29	FOLWELL	1	< 0.3
11034896	2021-11-15	7:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 9	FOLWELL	1	0.9
11034897	2021-11-15	7:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 11	FOLWELL	1	0.9
11034898	2021-11-15	7:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 5	FOLWELL	1	< 0.3
11034899	2021-11-15	7:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 6	FOLWELL	1	< 0.3
11034900	2021-11-15	7:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	OFFICE 3	FOLWELL	1	< 0.3
11034901	2021-11-15	7:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 1	FOLWELL	1	< 0.3
11034902	2021-11-15	7:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 2	FOLWELL	1	< 0.3
11034903	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CAFETERIA	FOLWELL	1	1.0
11034904	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CAF	FOLWELL	1	0.7
11034905	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	KITCHEN OFFICE	FOLWELL	1	0.9
11034906	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CUSTODIAN OFFICE	FOLWELL	1	1.0
11034907	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CUSTODIAN OFFICE	FOLWELL	1	1.0
11034908	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	STAFF 59	FOLWELL	1	0.8
11034909	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 40	FOLWELL	1	0.7
11034910	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 42	FOLWELL	1	1.4
11034911	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 44	FOLWELL	1	0.9
11034912	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 46	FOLWELL	1	1.0
11034913	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 46	FOLWELL	1	0.6
11034914	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 48	FOLWELL	1	0.9
11034915	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	GYM 52	FOLWELL	1	1.3
11034916	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	GYM OFFICE	FOLWELL	1	0.9
11034917	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 156	FOLWELL	1	0.8
11034918	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 162	FOLWELL	1	0.8
11034919	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	MAIN OFFICE	FOLWELL	1	0.5
11034920	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	PRINCIPAL OFFICE 164D	FOLWELL	1	0.8
11034921	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 272	FOLWELL	1	2.3
11034922	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 230	FOLWELL	1	< 0.3
11034923	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 305	FOLWELL	1	< 0.3
11034924	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 358	FOLWELL	1	0.8
11034925	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	CLASS 358	FOLWELL	1	< 0.3
11034926	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	ROOM A	FOLWELL	1	< 0.3

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Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
11034927	2021-11-15	8:00 am	2021-11-18	3:00 pm	70	MPS FOLWELL	FOLWELL	ROOM B	FOLWELL	1	< 0.3

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

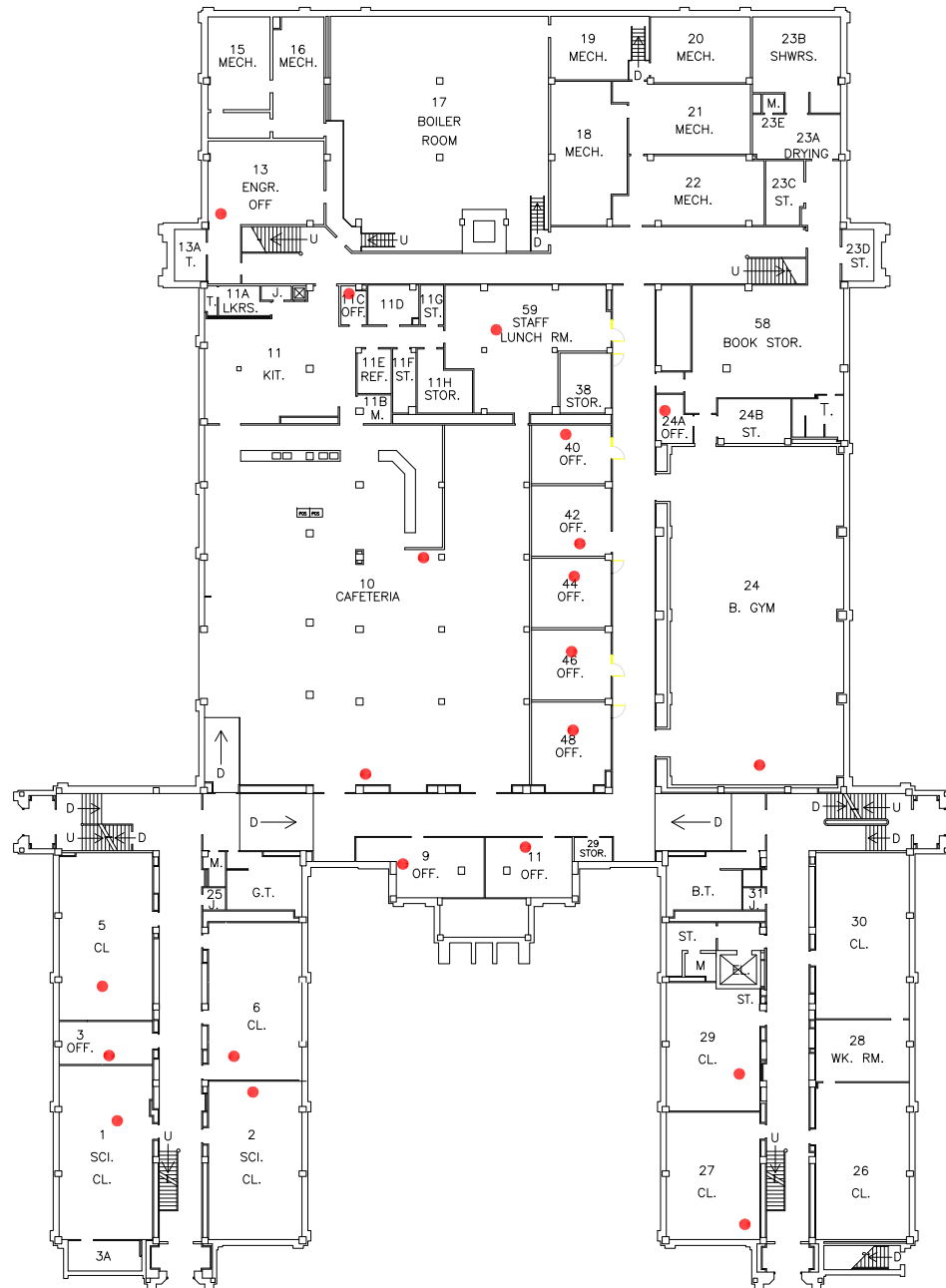
DIAGRAM #1 - RADON SAMPLE LOCATIONS



BASMENT FLOOR PLAN



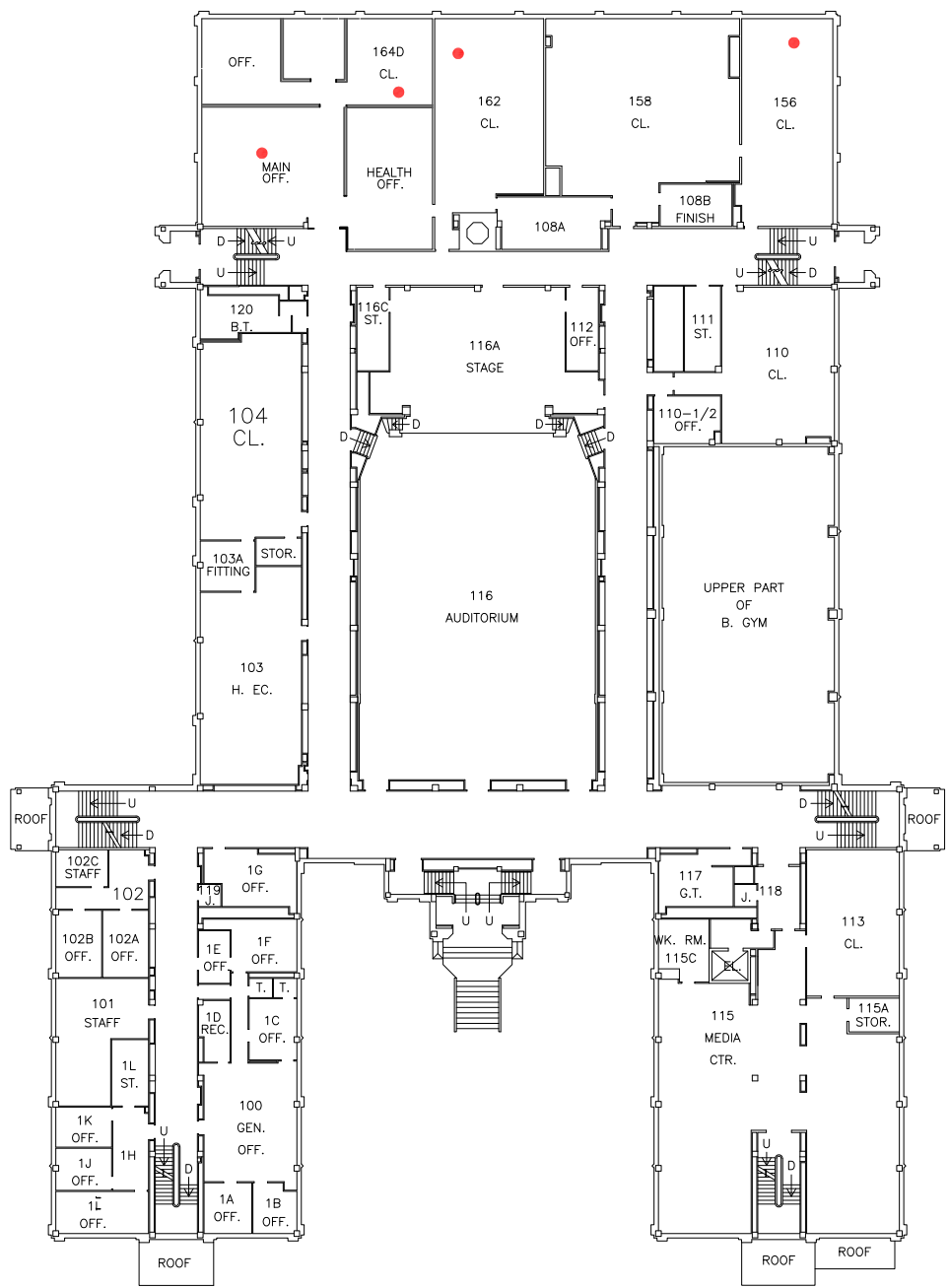
DIAGRAM #2 - RADON SAMPLE LOCATIONS



GROUND FLOOR PLAN



DIAGRAM #3 - RADON SAMPLE LOCATIONS



FIRST FLOOR PLAN

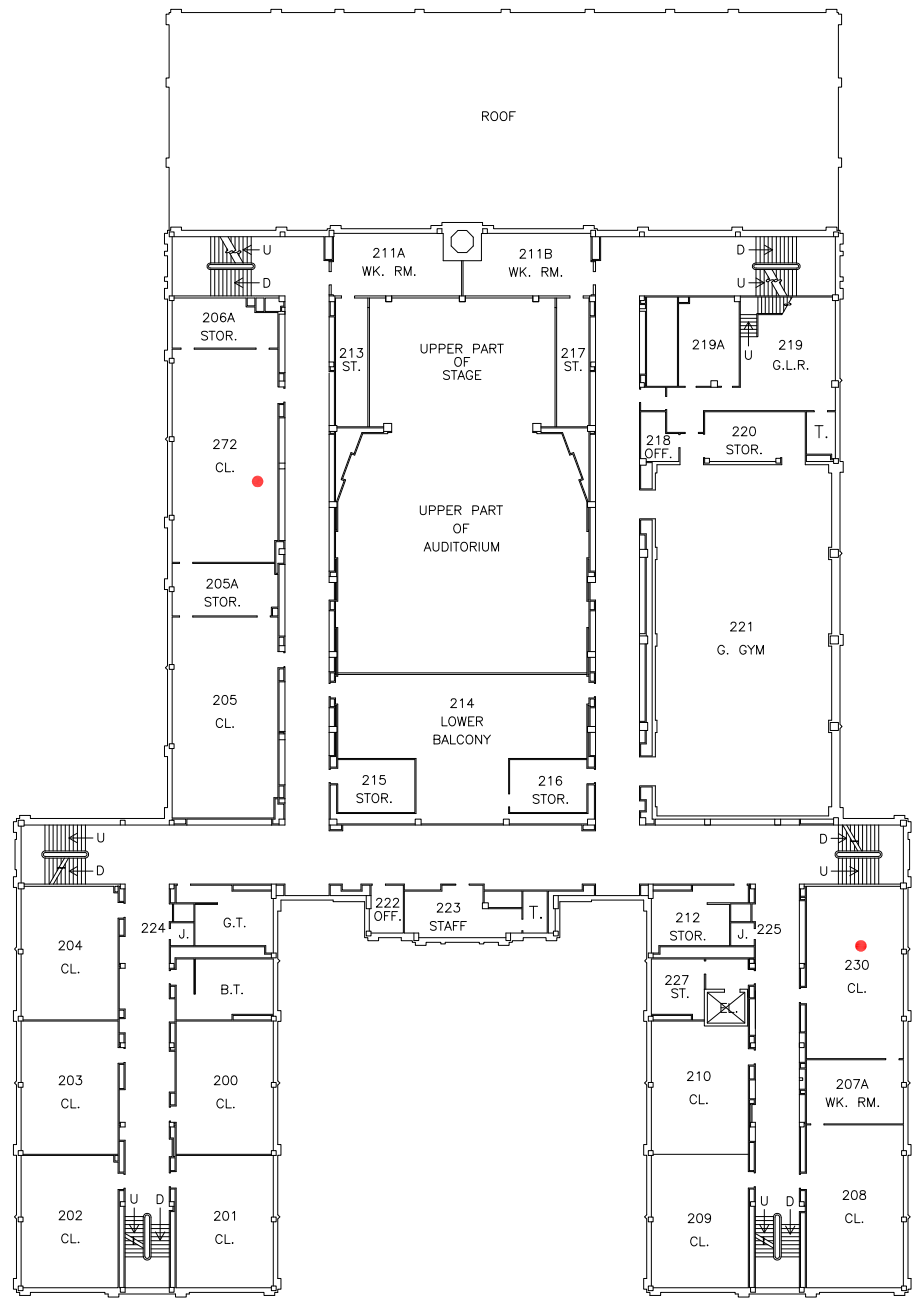
PREPARED ON: 11/22/21
 BY: ANDREW TINKLEBERG
 EH&S SAFETY SPECIALIST

FOLWELL SCHOOL
 3611 20TH AVE. SOUTH
 MINNEAPOLIS, MN 55407

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DIAGRAM #4 - RADON SAMPLE LOCATIONS



SECOND FLOOR PLAN

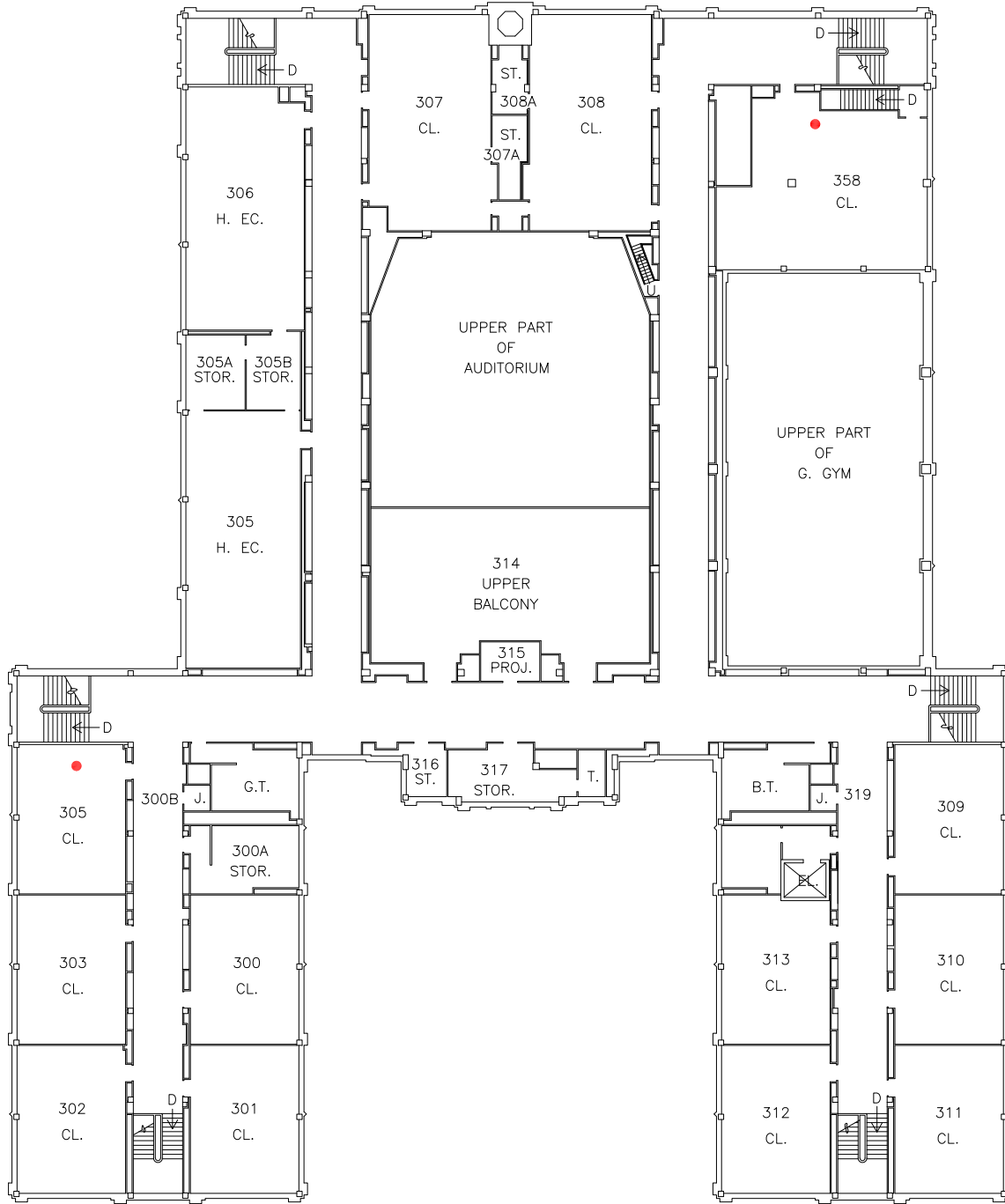
PREPARED ON: 11/22/21
 BY: ANDREW TINKLENBERG
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DIAGRAM #5 - RADON SAMPLE LOCATIONS



THIRD FLOOR PLAN





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Environmental Health & Safety

Office: (612) 668-0310

Direct: (612) 668-0306

Andrew Tinklenberg

Safety Specialist

Environmental Health & Safety

RADON TESTING NOTIFICATION (2021)

Folwell School

The District will be conducting short-term radon testing at Folwell School. Radon is a naturally occurring radioactive gas that is created from the breakdown of Radium that is naturally present in soil. Radon can enter buildings from the soil through gaps, cracks and holes in the foundation. Radon testing is performed periodically and is being performed based on Minnesota Department of Health recommendations and protocols. As per the recommendations, frequently occupied, ground level or ground contact areas will be the focus of the testing. Sampling locations will be selected that provide the best representation of these areas.

If your room is selected for testing, please do your part by ensuring that the devices are not removed or tampered with in any way. The devices are small, rectangular envelopes, approximately 4 by 6 inches and will typically be hung from the ceiling or an interior wall. The short-term radon detectors are planned to be placed and collected November 15 – 18, 2021. When available, sample results will be shared with your principal and placed on the EH&S webpage available through the main MPS website.

An example of the detector is pictured below:



Thank you very much for your cooperation. If you have questions, please contact me at 612-668-0306 or andrew.tinklenberg@mpls.k12.mn.us

Notice of Inspection - Radon Survey in Progress

An important step is being taken to ensure a safe and healthy building. Testing for radon is recommended for all homes and schools.

Radon is a naturally occurring radioactive gas that can be present in some buildings are concentrations greater than recommended. In the United States, radon exposure is the second leading cause of lung cancer and it is the leading cause of lung cancer in nonsmokers.

Radon testing is scheduled for:

Building(s): Folwell

Building Area(s): Throughout

Test Start Date: 11/15/21

Test End Date: 11/18/21

Access into your unit/room is: required not required

PLEASE START THE FOLLOWING BY:

Please help to maintain the following required test conditions:

- **Windows and Doors** need to be kept closed (aside from momentary entry and exit) on all levels of the building including areas not being tested,
- **Heating and cooling systems** need to set to normal temperatures (65-80°F),
- **Bathroom fans** should operate normally,
- Do not operate wood-burning or natural gas **fireplaces**,
- **Energy recovery ventilators (ERV) or heat recovery ventilators (HRV)** should be set to the lowest level they are used at through the year, and
- Avoid excessive operation of **exhaust systems** that draw air from laundries, workshops, community kitchens.

For inquiries or reporting concerns:

Contact Person: Andrew Tinklenberg

Phone: 612-668-0306

Visit mn.gov/radon for more information about radon

Authorizations and Lines of Communications

Please complete the following to help us clarify lines of communication and responsibilities.

Staff authorized to respond to occupant and public inquiries:

Title/Name: Lee Setter Phone: 612-668-0310 Email: lee.setter@mpls.k12.mn.us

Title/Name: Phone: Email:

Person(s) authorized to receive report data and any incremental reports:

Title/Name: Lee Setter Phone: 612-668-0310 Email: lee.setter@mpls.k12.mn.us

Title/Name: Andrew Tinklenberg Phone: 612-668-0306 Email: andrew.tinklenberg@mpls.k12.mn.us

Frequency of reports: Prior to testing After each phase of testing When testing is complete

Client & Facilitating Staff Contact Information

Client/Authorized Agent: Lee Setter Phone: 612-668-0310 Email: lee.setter@mpls.k12.mn.us

Onsite Supervisor: Andrew Tinklenberg Phone: 612-668-0306 Email: andrew.tinklenberg@mpls.k12.mn.us

Building Access: Andrew Tinklenberg Phone: 612-668-0306 Email: andrew.tinklenberg@mpls.k12.mn.us

HVAC Operations: Jason Kohnen Phone: 612-668-0338 Email: Jason.kohnen@mpls.k12.mn.us

Other Contacts (Title/Name): Phone: Email:

Radon Testing Professional Contact Information:

Scheduling/Logistics: Andrew Tinklenberg Phone: 612-668-0306 Email: andrew.tinklenberg@mpls.k12.mn.us

On-site Professional: Andrew Tinklenberg Phone: 612-668-0306 Email: andrew.tinklenberg@mpls.k12.mn.us

Licensed Field Technician: Andrew Tinklenberg Phone: 612-668-0306 Email: andrew.tinklenberg@mpls.k12.mn.us

Licensed Field Technician: Phone: Email:

Client Commitment to Compliance

By signing below, I am committing to help ensure that building conditions required to achieve reliable radon tests are met.

Management

Help Onsite Supervisors and Building Operations Staff maintain closed-building conditions and meet the requirements list above.

Name: Andrew Tinklenberg@mpls.k12.mn.us


Signature: 

Date: 11/15/21

Onsite Supervisor

To help ensure reliable radon tests, the onsite supervisor will:

- **Prior Notification:** distribute notices to all building occupants no later than the day before testing. Notices must be given to all occupants regardless if their unit/room is being tested and posted in publicly accessible areas such as corridors, elevators, and offices.
- **Access:** provide access to each test location within the building on the same day for the event of placing test devices and a second event for retrieving test devices.
- Name: Andrew Tinklenberg@mpls.k12.mn.us


Signature: 

Date: 11/15/21

Building Operations Staff

To help ensure reliable radon tests, Building Operations Staff will:

- **Building Preparation:** no later than 12 hours prior to the start of the test, review each building scheduled for testing for compliance with closed-building requirements.
- **Compliance Verification:** verify closed-building conditions and ensure that any repairs or adjustments that impact these conditions are completed 12 hours prior to the start of the test. Initial when verified.
- Name: Andrew Tinklenberg@mpls.k12.mn.us

Signature: 

Date: 11/15/21

Building Address: 3611 20th Ave. S., Mpls., MN

Date Completed: 11/15/21 Initials: AJT

CLIENT COMMITMENT TO COMPLIANCE

Actions Required at Least 12 hour prior to test and throughout	
Windows	Close or seal on all levels of the building, including areas not being tested Exception: Do not close openings to outside to outside air designed to provide air needed for combustion appliances.
External doors (except for normal entry or exit)	
Other openings to the exterior (as a result of disrepair, incomplete construction or structural defect)	
Heating & Cooling Systems	Set to normal occupied temperatures: 65° - 80°F (Maintenance inspection of systems are recommended prior to testing)
Variable Outdoor Air Ventilation Systems (if applicable) Systems such as manually operated dampers, energy economizer systems, energy recovery ventilators (ERV), or heat recovery ventilators (HRV) that seasonally vary outdoor air ventilation for energy savings or comfort	Close outside air inlet dampers or set to minimum outdoor air intake settings that apply at all times of the year when a building is significantly occupied
Window Air Conditioners	Dampers to outside air shall be closed
Variable Air Volume (VAV) Systems (if applicable) Systems that temper room temperature using thermostats to vary the volume of heated or cooled air coming into rooms	Set all thermostats to between 65° - 80°F in all rooms that are served by the system
Return-Air Ducts laid in Soil (if applicable) Return-air ductwork is located under a slab, or otherwise laid in soil.	All testing company immediately
Heating, ventilation, and air conditioning (HVAC) setback in non-residential locations If non-residential rooms are operating with HVAC setback temperatures during nights or weekends that are outside of normal occupied temperatures of 65° - 80°F	Alter to retain temperatures within range of 65° - 80°F Or contact the testing company



Folwell Test Condition Summary

November 15-18, 2021 – Minneapolis, MN (Climate Zone 6)

	Annually	During Testing
Outdoor Temperatures	Average = 46° F	Max. = 43° F Min. = 28° F Average = 35° F
Operating Conditions (Heating/Cooling)	Heating – 50% Cooling – 25% Mixed – 25%	Heating – 100% Cooling – 0% Mixed – 0%
Air Distribution Systems	Intermittent during summer	Active

* - Note: Winds were moderate throughout the testing period and light snow was recorded on Thursday.

Informative Advisories

1. Fluctuations in radon concentrations are usually caused by either:
 - changes in the strength of indoor air pressures that draw soil gas into a building; or
 - changes in the volume of outside air entering a building.
2. Clear characterization of a radon hazard is more likely to occur when:
 - Outdoor temperatures extend below 65°F (18°C), at least intermittently, which causes natural indoor air pressures that draw radon laden soil gas into a building; and
 - Heating or cooling distribution fans are at least intermittently active during a test.
3. Measurements more likely to reflect an occupant’s exposure to radon are measurements conducted under conditions that most closely align to the building operating conditions that prevail during the greatest amount of time each year.

* - Above advisory information is taken from page 31 of the ANSI/AARST Standard, “Protocols for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings, 2014 with 1/21.” Additional advisory notes/information will be added when necessary.

ANSI/AARST ADVISORY STATEMENTS

8-A Reporting Low Radon Concentrations

Consider fixing the building if test results indicate radon concentrations greater than half the action level, (e.g., between 2 and 4 pCi/L). Responsible care requires repeating initial testing procedures for all building(s) at least every 5 years and in conjunction with any sale of a building. Radon testing should also be conducted when any of the following circumstances occur:

- a new addition is constructed or alterations for building reconfiguration or rehabilitation occur;
- a ground contact area not previously tested is occupied, or a building is newly occupied;
- heating or cooling systems are significantly altered, resulting in changes to air pressures or pressure relationships;
- ventilation is significantly altered by extensive weatherization, changes to mechanical systems or comparable procedures;
- significant openings to soil occur due to:
 - groundwater or slab surface water control systems that are altered or added (e.g., sumps, perimeter drain tile, shower/tub retrofits, etc.) or,
 - natural settlement causing major cracks to develop;
- earthquakes or construction blasting, fracking or formation of sink holes nearby; or
- a mitigation system is altered, modified or repaired.

Should testing indicate concentrations that meet or exceed the action level, conduct evaluations, corrections and further testing until radon concentrations have been mitigated to below the action level.

Table 8-B Reporting Elevated Radon Concentrations

Fix the building. Test results indicate occupants may be exposed to radon concentrations that meet or exceed the action level. Efforts to reduce radon concentrations are not complete until retests provide evidence of effectiveness. The initial retest should be conducted within 30 days after mitigation efforts and system installations.

Post-mitigation clearance testing to confirm each building is fixed requires testing all buildings that demonstrated elevated radon concentrations:

- 1) in all ground-contact rooms and dwellings,
- 2) in not less than 10% of non-residential rooms and dwellings on each upper floor.

Should testing indicate concentrations that meet or exceed the action level, conduct evaluations, corrections and further testing until radon concentrations have been mitigated to below the action level.

* - Above advisory information is taken from page 28-29 of the ANSI/AARST Standard, "Protocols for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings, 2014 with 1/21 Revisions." Additional advisory notes/information will be added when necessary.