

**WISE STEPS INC.
SAFETY AND INDUSTRIAL HYGIENE CONSULTING
INDUSTRIAL HYGIENE REPORT**

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CHURCH BUILDING PLANNING OVERSIGHT
COMMITTEE**

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**PROJECT: SCOTTISH RITES LODGE
1685 W. 13th Ave, Eugene, Oregon**

ONSITE OCTOBER 20, 2009

REPORT DATE: OCTOBER 24, 2009

OVERVIEW

The Unitarian-Universalist Church of Eugene has established a Building Planning Oversight Committee to gather information relevant to the proposed purchase of the former Scottish Rites Lodge located at 1685 W. 13th Avenue, Eugene, Oregon. Members of the committee have expressed concern about the potential for mold in the building.

PURPOSE

Wise Steps, Inc was asked to conduct an assessment and testing to identify locations of fungal growth in the building, and to determine whether there is an elevated level of airborne mold spore in the building.

ASSESSMENT FINDINGS AND TEST RESULTS

The Scottish Rites Lodge was built in 1954 and is a wood-framed building with open meeting areas and there is a large commercial kitchen.

The building has a variety of interior finishes:

- Large areas of the building walls and ceiling are covered with different types of acoustical tile adhered to sheetrock.
- Walls are painted, wood paneled and wallpapered over sheetrock.
- Floor coverings consist of carpet, vinyl floor tile and vinyl-asbestos floor tile.

- Restrooms have carpeting and ceramic tile floors and in some areas tile walls.
- Throughout the building are carpeted steps, large draperies and upholstered furniture that appear to have installed at different times.
- The attic is accessible and contains wood framing, fiberglass insulation, stored ceiling tiles and an air handling unit. Asbestos insulated pipes are present in the attic.

There is no known history of major roof leaks or other flooding in the building and only two areas had ceiling tiles that were visibly stained from previous water leaks.

- One area, located in the Ray E. Allen room (used as a small kitchen) is located directly below the attic air handling unit, which had evidence of condensate leaks visible in the attic. The sheetrock below the air handling unit in the attic has signs of moisture staining but is currently dry.
- The other area is located in the table and chair storage room. This stain appeared to be associated with the fire-sprinkler system.

Investigation above the ceiling tiles in both areas did not reveal visible mold growth and the sheetrock above the acoustical tiles was dry.

The women's restroom is adjacent to chair/table storage room and it is possible that there may have been water leakage in the restroom ceiling as well. The restroom does not have ceiling tiles and no moisture staining or surface growth was visible on the sheetrock ceiling.

All areas in the building were reviewed for signs of water damage, evidence of excessive moisture and fungal growth. Other than the two areas mentioned and a current water leak was noted in the women's restroom associated with a flush valve, there was no evidence of damp or water damaged building materials.

Moisture Testing

Mold must have moist or wet conditions to grow on or in surfaces, consequently moisture tests are important tools in determining current problem areas.

Moisture tests were taken throughout the building and all building materials were dry.

Presence of Asbestos-containing Materials

A variety of building materials were noted that are considered potentially asbestos containing. A complete asbestos assessment has already been conducted and abatement is planned.

Materials found during this assessment that are likely to contain asbestos include:

- Pipe insulation in the attic
- Vinyl asbestos floor tile in various locations with associated mastic.
- Acoustic ceiling tiles with associated mastic.
- Sprayed on texturing material on acoustic tiles.
- Possible fire resistant board and paint installed behind wall and baseboard electric heaters.

Mold Test Results

No surface fungal colonization was noted during this inspection therefore no surface samples were collected. Five air samples were collected to determine the overall level of airborne fungal material for comparison with outdoor samples, and to assist in detecting locations where there may be fungal material not visible during this assessment.

As a general rule of thumb the type of fungus collected from indoor air should match the outdoor air types and be present at lower levels than outdoors because of air filtration systems.

Sample A5 - Outdoors, all interior samples are compared to this sample since there are no government regulations on how much and what kind of spore is acceptable in an occupied space. *Interpretation of the sample results requires correlating the type and number of spore found in a building to the outdoor environment spore composition.*

The outdoor sample collected a total fungal count of 22,800 spores/m³. This sample consisted of predominantly Basidiospores (82%) and Ascospores (16.3%). A variety of other spore types were present at less than 1.1% each including Aspergillus/Penicillium, Cladosporium, Ganoderma, Myxomycete and Rust.

Sample A1 – Ambient Air in the Ray E. Allen room (small kitchen)

This room had evidence of a past water leak in the ceiling which is likely associated with the air handling unit in the attic. The sample collected a total fungal count of 2750 spores/m³ consisting of Basidiospores (70.5%), Cladosporium (18.4%), Aspergillus/Penicillium (7.7%). The number of hyphal fragments (parts of the mold colony) was 127 counts/m³. A variety of spore types were present at less than 1.5% each including Alternaria, Ganoderma and Rust. This sample has significantly fewer spores than were present outdoors with similar distribution of spore types suggesting natural infiltration of outdoor air.

Sample A2 – Ambient Air in the Women’s Restroom

There were no signs of water damage in this room, however, reports of respiratory discomfort were made. This room is adjacent to the table/chair storage room where the ceiling tile is stained. This sample collected a total fungal count of 3300 spores/m³ consisting primarily of Basidiospores (43.3%), Cladosporium (25.6%) and Aspergillus/Penicillium (21.7%). Other spore types were present at less than 2.5% including Epicoccum, Ganoderma, Myxomycete, Pithomyces, Rust and Ulocladium. This sample collected 211 hyphal fragments which suggest possible fungal colonization in this room however no surface growth was seen.

Sample A3 – Ambient Air – Main Sanctuary room

There were no signs of water staining in this room, however the majority of the ceiling and walls are covered with acoustical tile. The room is carpeted, has heavy curtains and upholstered theater chairs. This sample collected a total of 2840 spores/m³ consisting of Basidiospores (69.7%), Cladosporium (16.3%), Rust (8.9%), Aspergillus/Penicillium

(4.5%) and Alternaria (0.5%). This sample did not contain hyphal fragments and has significantly fewer spores than in the outdoor sample.

Sample A4 – West End – Large room with chairs along both walls.

This sample was taken in an area which may be remodeled to become classrooms or a children’s play area. The sample collected a total of 630 spores/m³ consisting of Basidiospores (45.8%), Cladosporium (33.5%), Aspergillus/Penicillium (13.3%), Rust (4.3%) and Alternaria (2.1%). This sample has very low spore count compared to the outdoor sample.

CONCLUSION

Visual observations, moisture testing and sample results indicate there has not been any significant water damage that would result in mold growth in the building.

The acoustical ceiling tiles, older carpeting and other textile materials likely contribute to the musty/dusty odors within the building. Since the acquisition plan includes extensive remodeling and replacement of most or all of these materials these odors should dissipate

The mold spore collected in the air samples are likely from outdoor air infiltrating through open doors and other air pathways into the building and/or from settled airborne spore accumulated over time.

Though the test taken in the women’s restroom showed slightly elevated airborne Aspergillus/Penicillium spores and hyphal fragment counts compared to the outdoor sample is not significant. The test may indicate a past water leak that resulted in mold growth inside walls or the test more likely reflected infiltration and trapping of spore that have infiltrated the building since there was no visible mold growth.

Based on this assessment there was no indication of major areas of mold growth which would require mitigation.

Lab Results: Air Samples

Sample Identification	A1 – Ray E. Allen Kitchen Area				A2 – Ladies Restroom			
Volume (M³)	0.0750				0.0750			
Media	Air-O-Cell™ Cassette				Air-O-Cell™ Cassette			
Date Analyzed	10/21/09				10/21/09			
Percent Of Trace Analyzed	100% of Trace at 600X Magnification				100% of Trace at 600X Magnification			
Debris Rating	3				4			
Analyte	Total Count	Count/M³		%	Total Count	Count/M³		%
		Result	D L			Result	D L	
Mycelial Fragments	3	127	42		5	211	42	
Pollen	4	169	42					
Total Fungal Spores	70	2750	42	100	94	3300	42	100
	Fungal Spore Identification				Fungal Spore Identification			
<i>Alternaria</i>	2	27	13	1				
<i>Arthrinium</i>								
Ascospores								
<i>Aspergillus/Penicillium</i> - Like	5	211	42	7.7	17	717	42	21.7
Basidiospores	46	1940	42	70.5	34	1430	42	43.3
<i>Botrytis</i>								
<i>Chaetomium</i>								
<i>Cladosporium</i>	12	506	42	18.4	20	844	42	25.6
<i>Curvularia</i>								
<i>Epicoccum</i>					5	67	13	2
<i>Ganoderma</i>	2	27	13	1	3	40	13	1.2
Myxomycetes					5	67	13	2
<i>Paecilomyces</i>								
Pithomyces					2	27	13	0.8
Rust	3	40	13	1.5	6	80	13	2.4
Scopulariopsis								
<i>Stachybotrys</i>								
<i>Stemphylium</i>								
<i>Torula</i>								
<i>Ulocladium</i>					2	27	13	0.8
Unidentifiable Spores								