



California State Board of Equalization
450 N Street, Sacramento, California

Mold Remediation – Mechanical Floor
April 1 – August 24, 2011
Closure Report
Project No. 2372.02-572



Prepared for:
California Department of General Services
707 Third Street, 3-305
Sacramento, California 95605

Prepared by:
Chris Corpuz, MS, CIH
Senior Associate
LaCroix Davis LLC

Report Date:
February 17, 2012



TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	BOE STAFF INTERVIEWS	1
3.0	PHOTOGRAPH REVIEW – MCA SPANDREL PANEL SURVEY	1
4.0	SUPPLEMENTAL WATER DAMAGE ASSESSMENT	1
5.0	ONSITE PROJECT MONITORING	2
6.0	CLOSURE REPORT DOCUMENTS.....	2
7.0	LIMITATIONS AND QUALIFICATIONS	3

LIST OF FIGURES

Figure 1	Water Damage Assessment – Revised
Figure 2	Containment and Sample Locations
Figure 3	Suspect Mold – August 2011

LIST OF TABLES

Table 1	BOE Staff Interviews – Historical Observations (Not applicable to this floor)
Table 2	Photograph Review – McGinnis-Chen Associates Spandrel Panel Survey (Not applicable to this floor)
Table 3	Revised BOE Water Damage Assessment Summary

APPENDICES

Appendix A	Protocols (Not applicable to this floor)
Appendix B	Daily Logs
Appendix C	Laboratory Reports
Appendix D	Correspondence
Appendix E	Meeting Minutes

1.0 Introduction

On July 2, 2008, LaCroix Davis LLC (LCD) was contracted by the State of California, Department of General Services (DGS), Real Estate Services, Project Management Branch (RES, PMB) to provide building and environmental forensic services at the Board of Equalization (BOE) building located at 450 N Street, Sacramento, California. The BOE building was substantially completed in December 1992 and has experienced a variety of water-related events throughout its history.

On October 29, 2009 LCD's original contract was amended to include the following activities to support the Mold Remediation Project for the BOE Building:

- Designate a project team;
- Conduct BOE staff interviews;
- Review photographs taken during the McGinnis-Chen Associates (MCA) Spandrel Panel Survey in 2005;
- Perform a supplemental water damage assessment (WDA);
- Provide onsite monitoring for the project;
- Compile all relevant project documents in a closure report for each floor.

Under the project management of Mr. Chris Corpuz, Senior Manager, the LCD field project team was staffed by personnel from various LCD offices:

- Stephen Davis, Principal;
- Benjamin Heckman, Senior Manager;
- Theodore Ice, Senior Associate.

2.0 BOE Staff Interviews

Floor M houses the building DGS maintenance and janitorial staff. The floor is occupied by non-BOE personnel and, therefore, for all BOE staff interviews were not conducted prior to the release of Floor M to the DGS Mold Remediation Project Team for inspection and remediation.

3.0 Photograph Review – MCA Spandrel Panel Survey

Floor M does not have spandrel/vison glass panels on the exterior surface of its perimeter walls. Therefore, an LCD review of photographs taken by MCA during their 2005 Spandrel Panel Survey was not applicable to this floor.

4.0 Supplemental Water Damage Assessment

A floor-wide Supplemental Water Damage Assessment was not performed on Floor M. When a specific area became available for possible mold remediation, JLS Environmental Services Inc. (JLS) prepared the area by removing supplies and equipment from it. As specific areas of the floor were cleared of obstructions, LCD inspected the areas that had been visually obscured

by supplies and equipment during LCD's initial assessment in 2008/2009. During the walk-through, special attention was given to piping insulation and wall portions behind the cove base in restroom and drinking fountain areas.

This process allowed the LCD team to identify areas to be addressed by additional investigation, mold mitigation, or remediation work. Any additional water and mold-related findings are depicted in Figure 1 besides the initial assessment findings.

Identified areas of concern were subjected to sampling. Using a combination of surface tape lift and bulk samples, LCD tested stains on walls and other building materials to determine if the stains were indicative of visible mold growth (VMG). The sample locations are shown in Figure 2.

Surface tape lift and bulk samples were submitted to EMLab P&K (EMLab) for direct microscopic examination. EMLab is accredited by the American Industrial Hygiene Association for mold analyses. The laboratory reports were reviewed by the LCD team. Laboratory findings of "mold growth, minimal mold growth, and mold growth in vicinity" were classified as mold growth and the tested surfaces/areas were considered actionable.

Areas and materials that were identified to contain mold growth were subsequently placed under containment and subjected to an appropriate mitigative or remedial action. These actions were taken to eliminate or minimize potential exposures to VMG by personnel that may later access the subject area. The containment locations are shown in Figure 2.

5.0 Onsite Project Monitoring

On behalf of DGS, the LCD team of industrial hygienists provided on-site monitoring of the mold remediation activities in the form of:

- Testing and identifying areas for subsequent mold mitigation or remediation;
- Inspecting JLS-constructed containment structures prior to disturbance of any mold-contaminated materials by JLS;
- Providing periodic area air monitoring to confirm the protective efficacy of JLS containment structure and work practices;
- Inspection of the mitigated/remediated areas, prior to collecting final clearance air samples to confirm that the contaminated areas/materials within the containment had been adequately cleaned.

6.0 Closure Report Documents

The Closure Report was compiled from site monitoring and testing data prepared and accumulated during the mold remediation activities for this floor. Figures 1 through 3 identify findings from a revised WDA, carpet inspection locations, sample and containment locations, and areas where mold growth may potentially exist. Figure 3 should be consulted before walls or ceilings in these areas are penetrated for any reason in the future. Tables 1 through 3

summarize findings from BOE staff interviews, a review of photographs from the MCA Spandrel Panel Survey, and the revised WDA.

The following documents, as applicable to Floor M, are included in the Closure Report appendices:

- **Protocols** – Provide the procedures for conducting mold-related activities on the subject floor (Appendix A, not applicable to this floor);
- **Daily Logs** – Summarize the daily mold-related activities pertaining to the subject floor (Appendix B);
- **Laboratory Reports** – Present the analytical results for mold-related samples collected on the subject floor (Appendix C);
- **Correspondence** – Document communications between the LCD and the DGS project teams (Appendix D);
- **DGS Meeting Minutes** – Summarize the progress of scheduled and unplanned project activities as discussed in weekly meetings (Appendix E).

7.0 Limitations and Qualifications

The assessment performed by LCD does not include or cover the following matters: Matters that are subsequently discovered that could not have been reasonably foreseen or detected, using industry standards, during the performance of the assessment; matters that could not have been discovered by LCD because of barriers, lack of access or other matters affecting accessibility; matters that were not disclosed to LCD prior to, during, or after the performance of the assessment; any new deficiency that arise after the completion of the assessment by LCD.

To the extent that additional information becomes available to LCD, LCD reserves the right (without any obligation to do so) to modify its evaluation and/or this report at any time, based upon further review and analysis of any such additional information or data.

Certain items mentioned in the report were performed by others not involving the supervision of, or management by, LCD, but were relied upon by LCD in making its evaluation and assessment.

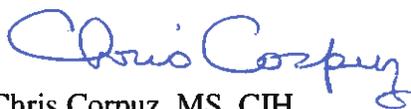
The assessment performed by LCD is not meant or intended to supplement, modify, or extinguish any warranty or representation made or given by third parties performing any of the recommended corrective work.

When consultation involves microbiological growth, or any assessment thereof, such microbiological growth may reoccur if the source of the growth is not remedied. All remediation of fungi in indoor environments can be inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and site evaluation. Except as may be noted in the assessment performed by LCD, subsurface areas, latent defects, or non-accessible areas and conditions were not field investigated and may differ from the conditions implied by the surface observations.

Additionally, the passage of time may result in a change in the environmental characteristics at the subject property and the surrounding properties. No investigation or assessment can absolutely rule out the existence of any microbiological growth at any given site. LCD does not remediate or remedy sources of microbiological growth.

This Report and the assessment/survey conducted by LCD is prepared, and was performed, solely for the use and benefit of the client identified at the beginning of this report. No other party may rely on this report for any other purpose.

Report prepared by,



Chris Corpuz, MS, CIH
Senior Manager
LaCroix Davis LLC

Report reviewed by,



Stephen C. Davis, MPH, CIH
Principal
LaCroix Davis LLC

FIGURES

Figure 1 **Water Damage Assessment Revised**

Figure 2 **Containment and Sample Locations**

Figure 3 **Suspect Mold – August 2011**

KEYED SHEET NOTES

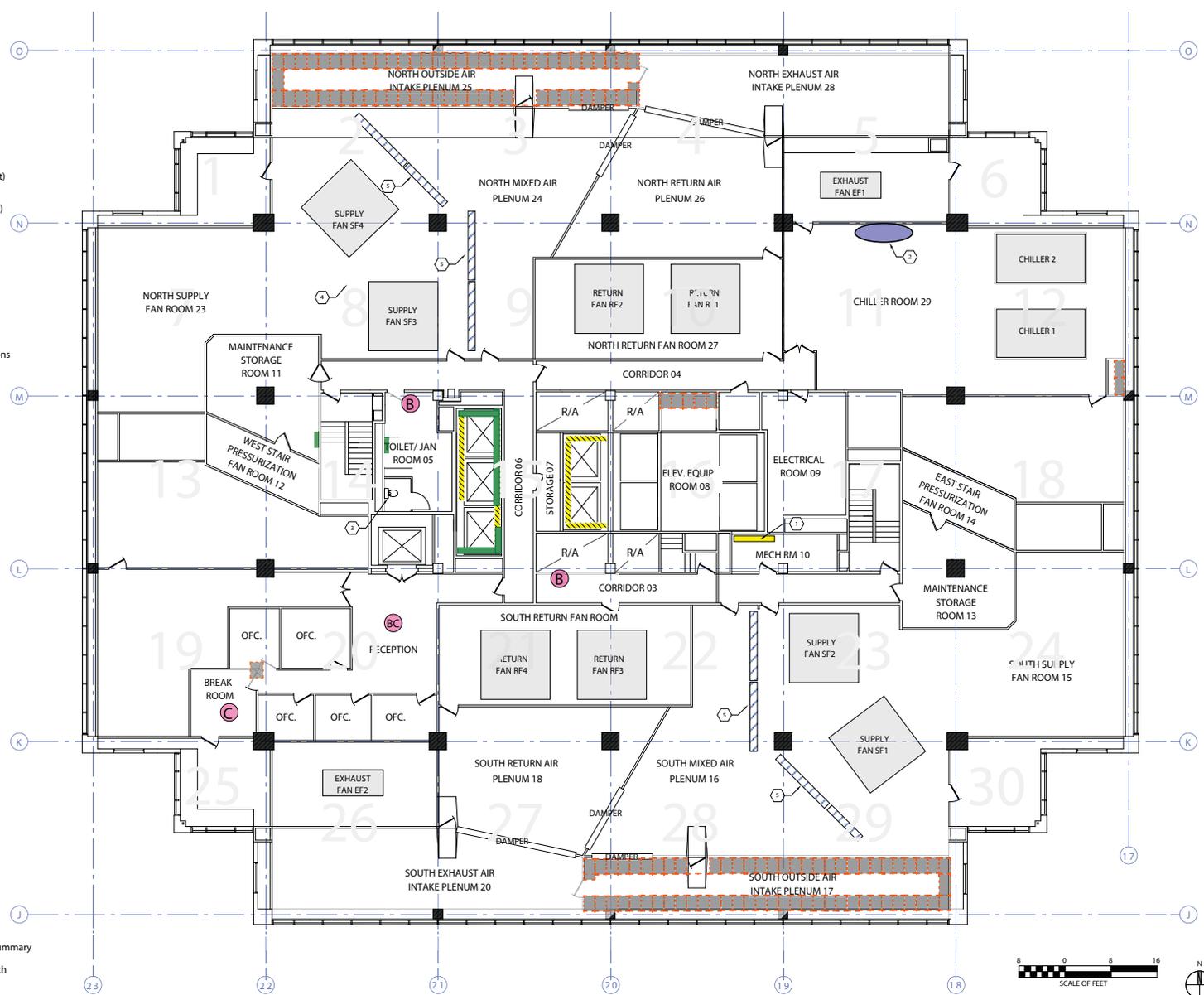
- ① L/19 Water stain on concrete floor (current)
- ② N/18.5 failure of chiller tank chemical manifold (historic)
- ③ Floor tile damage from water behind toilet (current)
- ④ Loose acoustic ceiling tile (current)
- ⑤ Condensate pans rusting (current)

GENERAL NOTES

- ① LCD inspection locations are approximate.
- ② The locations of LCD inspections and VAVs (terminal units) are approximate.

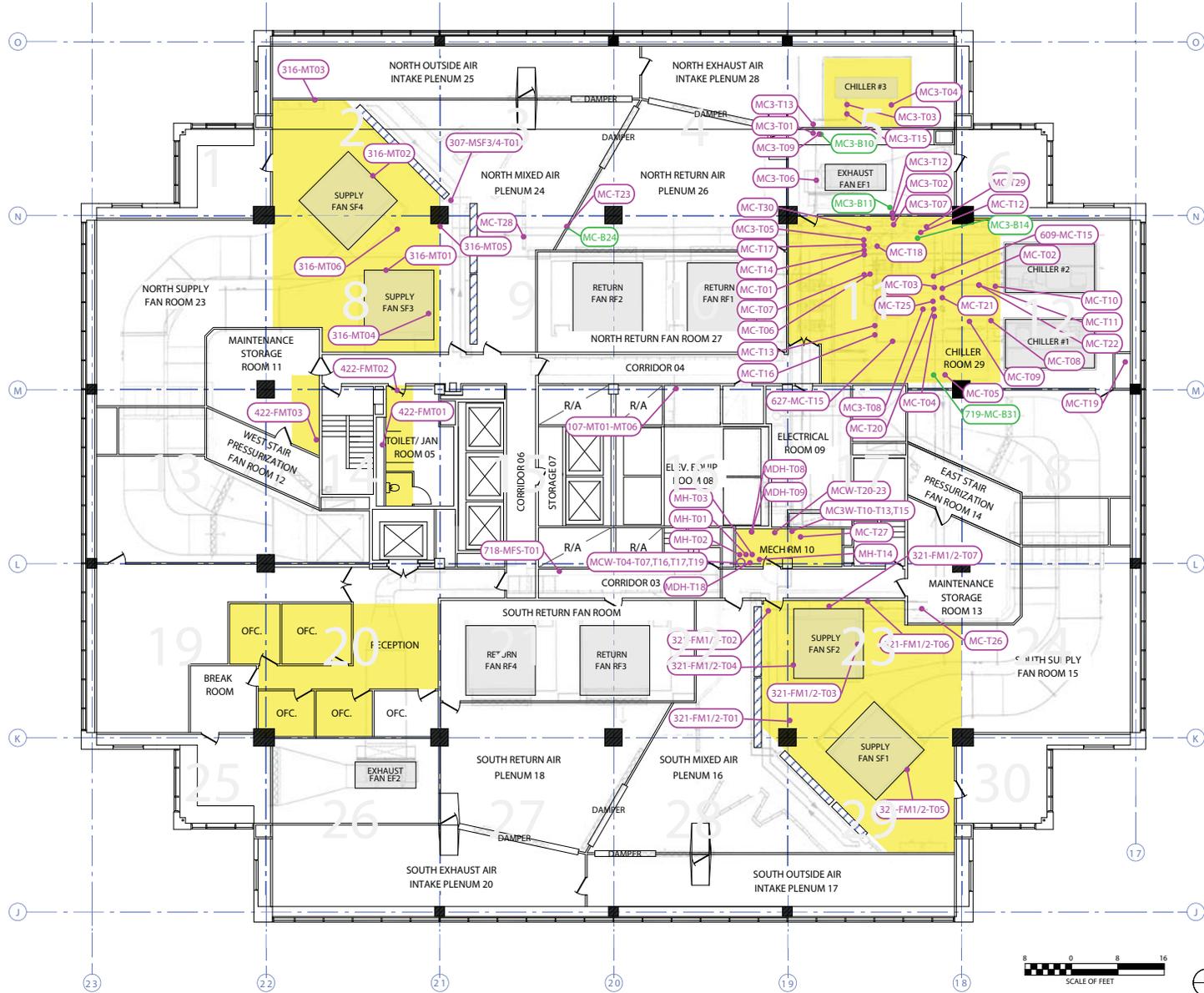
LEGEND

- Active water leak
- Current water stained surface
- Historic water leak/stained surface
- Current mold growth
- Historic mold growth
- Current water on floor
- Historic water on floor
- Destructive testing location (historic)
- 325 Room number
- LCD inspection location no findings
- LCD inspection location active leak
- LCD inspection location water stain
- LCD inspection location other notation - see WDA summary
- LCD inspection location with multiple findings "A", "B", or "C" as indicated



LEGEND

- Containment location
- MCB24 Bulk sample location
- MCT23 Tape lift sample location



State of California
 Department of General Services
 (DGS No. 125828)
 (AGMT. No. 3126150)
 (LCD No. 2372.02-572)

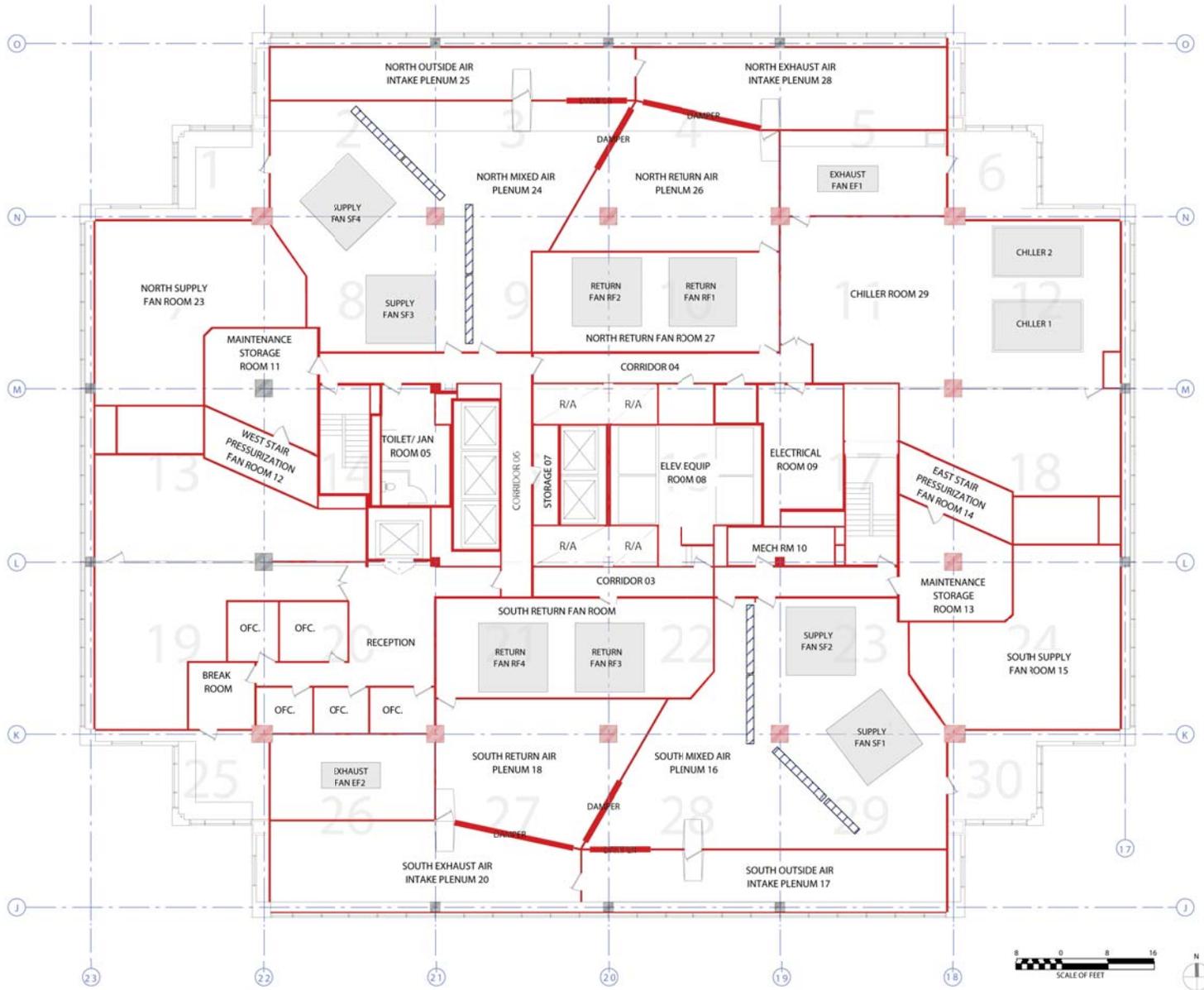
Containment and Sample Locations
 Board of Equalization Building, Mold Remediation
 450 N Street, Sacramento, California

Mech. Floor

Figure 2

LEGEND

 Suspect mold location



State of California
Department of General Services
(DGS No. 125828)
(AGMT. No. 3126150)
(LCD No. 2372.02-572)

Suspect Mold - August 2011
Board of Equalization Building, Mold Remediation
450 N Street, Sacramento, California

Mech. Floor

Figure 3

TABLES

- Table 1** **BOE Staff Interviews – Historical Observations**
(Not applicable to this floor.)
- Table 2** **Photograph Review – McGinnis-Chen Associates**
Spandrel Panel Survey *(Not applicable to this floor.)*
- Table 3** **Revised BOE Water Damage Assessment Summary**

Table 3: Revised BOE Water Damage Assessment Summary

Location			Above Ceiling Tiles				Below Ceiling Tiles / Room Area		
Floor	Grid / Column	Room	Tiles (left above ceiling)	Fiberglass insulation (left above ceiling)	Ceiling (visible issues)	Comments	Observer	Comments	Observer
Mechanical Floor (12)									
Mech	1		NSC	NSC	NSC	No issues. (Spots on ceiling thought to be from spiders.)	TMI		CC
Mech	2		NSC	NSC	NSC	Stained pipe insulation.	TMI	Several loose sound absorbing ceiling panels. Staining on GB walls.	TMI
Mech	3		NSC	NSC	NSC	No issues	TMI	Staining on GB walls.	CC
Mech	4		NSC	NSC	NSC	No issues	TMI	Staining on GB walls.	CC
Mech	5		NSC	NSC	NSC	Stained pipe insulation.	TMI		
Mech	6		NSC	NSC	NSC	No issues	TMI		
Mech	7		NSC	NSC	NSC	No issues	TMI		
Mech	8		NSC	NSC	NSC	Stained pipe insulation.	TMI	Supply fan room 3 & 4 (Grid 8) condenser coil condensate drains are directly adjacent to column N-21. Several sound absorbing ceiling panels are coming loose, limited visibility but no apparent water stain on GB ceiling.	CC
Mech	9	Cooling Coil Room	NSC	NSC	NSC	Spots on ceiling look like result of spiders, not water leaks.	TMI	Condensate pans are rusting.	CC
Mech	10				Y	Entered plenum from hatch in hallway and viewed all adjacent grids. Chilled water electrical connection is corroded in exhaust fan room.	TMI		
Mech	11		NSC	NSC	NSC	Stained pipe insulation.	TMI		
Mech	12	Chiller Room	NSC	NSC	NSC	Stained FP and pipe insulation.	TMI	Water stained GB on E perimeter wall.	TMI
Mech	13		NSC	NSC	NSC		TMI		
Mech	14	Women /Men's Rooms	N	N	N	Typical hard ceiling. Nothing unusual above access panel. No signs of water above ceiling.	TMI	Floor tile damage from water behind toilet in men's restroom.	CC

Table 3: Revised BOE Water Damage Assessment Summary

Location			Above Ceiling Tiles				Below Ceiling Tiles / Room Area		
Floor	Grid / Column	Room	Tiles (left above ceiling)	Fiberglass insulation (left above ceiling)	Ceiling (visible issues)	Comments	Observer	Comments	Observer
Mech	14	Women /Men's Rooms	N	N	Y	Typical hard ceiling. Water staining on top of ceiling.	TMI	Visible staining on wall behind cove base below the sink in both bathrooms.	TMI
Mech	15		NSC	NSC	NSC	No issues.	TMI		
Mech	16		NSC	NSC	NSC	No issues.	TMI		
Mech	16	Elevator Equip. Room	NSC	NSC	NSC	Stained pipe insulation.	TMI	Staining on N wall.	TMI
Mech	17		NSC	NSC	NSC	Stained pipe insulation.	TMI		
Mech	18		NSC	NSC	NSC	No issues.	TMI		
Mech	19		NSC	NSC	NSC	No issues for Supply Room. Break room has suspended ceilings with fiberglass insulation on panels, no visual access.	TMI		
Mech	20		NSC	NSC	NSC	Entered plenum through hatch just east of freight elevator. Corrosion on a fire sprinkler elbow and water stains on GB wall in vicinity of hatch. Office area has suspended ceilings with fiberglass insulation on panels, no visual access.	TMI		
Mech	21		NSC	NSC	NSC	No issues.	TMI		
Mech	21	Corridor 3	N	N	Y	Typical hard ceiling. Water staining on top of ceiling.	TMI		
Mech	22		NSC	NSC	NSC	Entered plenum from hatch in hall. No issues.	TMI	Significant rust on condensate pans.	CC
Mech	23		NSC	NSC	NSC	Stained pipe insulation.	TMI		
Mech	24		NSC	NSC	NSC	No issues.	TMI		
Mech	25		NSC	NSC	NSC	No issues.	TMI		



Table 3: Revised BOE Water Damage Assessment Summary

LCD No. 2372.02-572
BOE Mold Remediation

Location			Above Ceiling Tiles				Below Ceiling Tiles / Room Area		
Floor	Grid / Column	Room	Tiles (left above ceiling)	Fiberglass insulation (left above ceiling)	Ceiling (visible issues)	Comments	Observer	Comments	Observer
Mech	26						TMI		
Mech	27		NSC	NSC	NSC	No issues	TMI	Staining on GB walls.	CC
Mech	28		NSC	NSC	NSC	No issues	TMI	Some prefilters fell off and lie on floor. Staining on GB walls.	CC
Mech	29		NSC	NSC	NSC	Stained pipe insulation.	TMI	Staining on GB walls.	CC
Mech	30		NSC	NSC	NSC	No issues	TMI		

Abbreviations: FP = Fireproofing GB = Gypsum Board LF = Linear Feet NA = Not Applicable for WDA NC = North Core NSC = No Suspended Ceiling
SF = Square Feet VAV = Variable Air Volume

Directions: NE = Northeast NW = Northwest E = East S = South SE = Southeast SW = Southwest W = West

N = North

SC = South Core