

managing risk with responsibility

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November 23, 2010

Signature on File

TO: Mr. David Watkins, Principal

Whiddon-Rogers Education Center

FROM: Edward See, Project Manager

Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

ESE, Library, Room 1, 2, 3, 4, 6, 7, 8, 18, 22

On November 5, 2010, I conducted an assessment of the ESE room, Library and rooms 1, 2, 3, 4, 6, 7, 8, 18 and 22 at the Thompson Academy (off site location).. This evaluation included observations of the flooring system, ceiling tiles, false ceiling plenum, environmental surfaces, interior and exterior walls, and the accessible ventilation equipment. Additionally, environmental parameter measurements were taken to include temperature, relative humidity, and carbon dioxide. The detailed findings, along with the recommended corrective action can be found on the attached IAQ Assessment Worksheets.

The IAQ assessment did identify one or more existing conditions impacting IAQ and we recommend that the building owner initiate action to correct deficiencies in systems and maintenance that could contribute to decreased indoor air quality. At the time of the assessment, these concerns were not an immediate health or safety concern to building occupants. However, due to individual sensitivities and predisposing health factors, it is possible that some building occupants may elicit a health response to agents and / or conditions identified during the evaluation. Therefore, to further improve IAQ, prevent development of future IAQ-related problems, and to reduce the potential for IAQ-related complaints by building occupants, the IAQ Assessment Team recommends appropriate follow up of each item identified and listed in the attached evaluation.

Should any questions arise, or if the current concerns continue after the attached recommendations have been addressed, please feel free to contact me at 754-321-1900.

cc: Dr. Desmond Blackburn, Area Superintendent
Jan Beal, Area Director
Jeffrey S. Moquin, Executive Director, Support Operations
Mark Howard, Assistant Principal, Whiddon-Rogers Education Center
Joe DeLillo, Project Manager, Facilities and Construction Management
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division
Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

ES/tc Enc.

Thompson A	cademy - Whiddon	Rogers Off Site		Evaluation Requested October 28, 2010
Time of Day 9:	00 am			Evaluation Date November 5, 2010
Outdoor Conditions	Temperatur	e 89.7	Relative Humidity	47.7 Ambient CO2 391
Fish Temper ESE 6 Noticeable Odor Ceiling Type Wall Type Flooring	Range 68.2 72 - 78 No 2 x 4 Lay In Drywall Carpet	Relative Humidity 51.6 Visible water damage / staining No No Yes	30% - 60% Visible micro	Range # Occupants Max 700 > Ambient 2
	Clean Minor / Dek	Dust Needs oris Cleaning	NO	Corrective Action Required
Ceiling	Yes	No No		
Walls	Yes	No		
Flooring	No	s Yes		Deep Clean
HVAC Supply Grills	No Ye	s Yes		Clean as appropriate
HVAC Return Grills				
Ceiling at Supply Grills	Yes	No		
Surfaces in Room	No Yes	Yes		Clean as appropriate
bservations				
Findings (Building no - Heavy dust and dirt - Dust and debris on - Dust build up on end - Temperature was lo - HVAC return grill mid Building Owner: - Deep clean carpet - Clean HVAC supply - Clean environmenta - Evaluate HVAC syst - Install HVAC return	build up on floor HVAC supply grills vironmental surface w at the time of the issing grills al surfaces througho tem for proper oper	s assessment ut the room	ppropriate to increa	se temperature

Location Number

Thomp	oson Academy -	Whiddon Roge	rs Off Site		Evaluation Requested	October 28, 2010
Time of Day	9:00 am				Evaluation Date	November 5, 2010
Outdoor Cond	litions Te	emperature	89.7	Relative Humidity	47.7 Ambie	nt CO2 391
Fish	Temperature	Range Rel	ative Humidity	Range	CO2 Rar	nge # Occupants
Library	71.7	72 - 78	49.8	30% - 60%	510 Max 700	> Ambient 4
Noticeable O	dor Yes	da	Visible water mage / staining	Visible micro growth?	bial Amount o material affec	
Ceiling Type	2 x 4 La	y In	Yes	No	3 c	eiling tiles
Wall Type	Drywa	all	No	No		None
Flooring	Vinyl		No	No		None
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective Action Re	equired
Ceiling	No	Yes	Yes	Re	emove and replace ce	iling tiles
Walls	Yes	No	No			
Flooring	No	Yes	Yes		Clean and saniti	ze
HVAC Supply	Grills Yes	No	No			
HVAC Return	Grills No	Yes	Yes		Clean as appropri	ate
Ceiling at Sup Grills	pply Yes	No	No			
Surfaces in R	oom No	Yes	Yes		Clean as appropri	ate

Location Number

Observations

Findings (Building not owned by SBBC)

- Musty odor in room. Occupant had door open due to odor.
- 3 stained ceiling tiles
- Dust and debris on floor
- Dust and debris on HVAC return grills
- Dust and debris on A/C filter
- Leak from A/C drain pan
- Gaps around front door
- Dust build up on environmental surfaces

- Evaluate for cause of odor. Ensure that doors and windows remain closed. Open doors and windows allow humid untreated air into occupied space.
- Evaluate for cause of stained ceiling tiles and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Clean and sanitize flooring
- Clean HVAC return grills
- Remove and replace A/C filter
- Evaluate for cause of leak from A/C drain pan and repair as appropriate
- Evaluate gaps around front door and repair as appropriate
- Clean environmental surfaces throughout the room

Thomp	son Academy -	Whiddon Rogers	Off Site		Evaluati	on Requested	October 28, 20	J10
Time of Day	9:00 am				E	valuation Date	November 5, 2	010
Outdoor Cond	itions Te	mperature 8	9.7	Relative Humic	dity 47.7	Ambie	nt CO2 391	
l —	Temperature		tive Humidity	Range	CO2	Ran	· —	
Room 1 Noticeable Oc	71.1 dor Yes	_	54.1	30% - 60% Visible m		Amount of		18
Ceiling Type	2 x 2		age / staining	? grow Yes		material affec	ted eiling tiles	
Wall Type	Drywa	all	Yes	No		2 square fe	et at windowsill	
Flooring	Vinyl		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	tive Action Re	quired	
Ceiling	No	Yes	Yes		Remove a	and replace ce	iling tile	
Walls	No	Yes	Yes		Clea	an as appropri	ate	
Flooring	No	Yes	Yes		Cle	ean and sanitiz	:e	
HVAC Supply	Grills No	Yes	Yes		Clea	n as approopr	ate	
HVAC Return	Grills No	Yes	Yes		Clea	an as appropri	ate	
Ceiling at Sup Grills	oply Yes	No	No					
Surfaces in Ro	oom No	Yes	Yes		Clea	an as appropri	ate	

Location Number

Observations

Findings (Building not owned by SBBC)

- Occupant had window open at the time of the assessment. Advised that heat was on in the morning.
- 2 stained ceiling tiles
- Dust and dirt build up on wall
- Dust and debris on floor
- Dust and debris on HVAC supply and return grills
- Dust build up on environmental surfaces
- 1/4 inch gap around door
- Visible water staining and microbial growth (@2 square feet) at windowsills
- CO2 was elevated at the time of the assessment

- Ensure that doors and windows remain closed. Open doors and windows allow humid untreated air into occupied space.
- · Evaluate for cause of stained ceiling tiles and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Clean walls
- Clean and sanitize flooring
- Clean HVAC supply and return grills
- Clean environmental surfaces throughout the room
- Evaluate gaps around doors and repair as appropriate
- Evaluate area around windows for leaks and repair as appropriate. Evaluate wall material and repair/replace as appropriate.
- Evaluate HVAC system for proper operation and repair as appropriate to lower CO2 level

Thompson Academy - Whiddon Rogers Off Sit					Evaluation Requested October 28, 2010			
Time of Day	9:00 a	m				E	Evaluation Date	November 5, 2010
Outdoor Condi	tions	Temperat	ıre 89.	.7	Relative Hur	midity 47.7	7 Ambie	nt CO2 391
Fish Room 2	Temperatu 74.1	re Range 72 - 78		e Humidity 62.2	Range 30% - 60%	CO2 1502	Ran Max 700	ge # Occupants > Ambient 18
Noticeable Od	lor Y	′es		sible water ge / staining		e microbial rowth?	Amount of material affect	=
Ceiling Type		2 x 2		Yes		No	1 c	eiling tile
Wall Type		Drywall] [Yes		Yes	1 square fo	oot at windowsill
Flooring		Vinyl] [No		No		None
	Clea		or Dust ebris	Needs Cleaning		Corre	ctive Action Re	equired
Ceiling	N	<u>o</u>	'es	Yes		Remove	and replace ce	iling tile
Walls	N	0	'es	Yes		Cle	an as appropri	ate
Flooring	N	0	'es	Yes			Deep Clean	
HVAC Supply	Grills Ye	es	No	No				
HVAC Return	Grills N	0	'es	Yes		Cle	an as appropri	ate
Ceiling at Sup Grills	ply N	0	'es	Yes		Cle	an as appropri	ate
Surfaces in Ro	oom N	0 1	es	Yes		Cle	an as appropri	ate

Location Number

Observations

Findings (Building not owned by SBBC)

- 1 stained ceiling tile
- Dust and dirt build up on walls
- Dust and debris on floor
- Dust and debris on HVAC return grills and on ceiling at supply grills
- Dust build up on environmental surfaces
- 1/4 inch gap around common area doors to the outside
- 2 windows on East side of room not closing properly
- Visible water staining and microbial growth (@1 square foot) at windowsills
- Humidity and CO2 were elevated at the time of the assessment

- Evaluate for cause of stained ceiling tiles and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Clean walls
- Clean and sanitize flooring
- Clean HVAC return grills and ceiling at supply grills
- Clean environmental surfaces throughout the room
- Evaluate gaps around doors and repair as appropriate
- Evaluate area around windows on East side of room for leaks and repair as appropriate. Evaluate wall material and repair/replace as appropriate.
- Evaluate HVAC system for proper operation and repair as appropriate to lower humidity and CO2 levels

Thomps	son Academy	- Whiddon R	ogers Off Site		Evaluati	ion Requested	October	28, 2010
Time of Day	9:00 am				E	valuation Date	Novembe	er 5, 2010
Outdoor Condi	tions T	emperature	89.7	Relative Hu	midity 47.7	Ambier	nt CO2	391
Room 3 Noticeable Od Ceiling Type Wall Type	2 x 4 La	all	58.1 Visible water damage / staining No		CO2 1184 e microbial rowth? No	Amount of material affec	> Ambient	Occupants 18
Flooring	Viny	1	No	L	No		None	
	Clean	Minor D / Debr	is Cleaning		Correc	ctive Action Re	quired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	Yes	No	No					
HVAC Supply	Grills Yes	No	No					
HVAC Return (Grills Yes	No	No					
Ceiling at Sup Grills	ply Yes	No	No					
Surfaces in Ro	oom No	Yes	Yes		Clea	an as appropria	ate	
bservations								

Location Number

0

Findings (Building not owned by SBBC)

- One broken ceiling tile and two tiles not seated properly
- Temperature was low and CO2 level was elevated at the time of the assessment
- Dust and debris on A/C filter
- Damaged wall near door (West)
- Broken windows allowing outside air intrusion
- Door broken on A/C closet
- Dust build up on environmental surfaces

- Remove and replace broken ceiling tile and ensure other tiles are properly seated
- Evaluate HVAC system for proper operation and repair as appropriate to increase temperature and lower CO2
- Remove and replace A/C filter
- Evaluate and repair wall near door (West)
- Repair broken windows
- Repair broken door on A/C closet
- Clean environmental surfaces throughout the room

I nomps	son Academy - v	vniadon Rogers	Off Site		Evaluat	ion Requested	October 2	20, 2010
Time of Day	9:00 am				E	Evaluation Date	November	5, 2010
Outdoor Condi	tions Ten	nperature 8	9.7	Relative Hui	midity 47.7	Z Ambier	nt CO2	391
Fish Room 4 Noticeable Od	73.5	72 - 78	54.5 isible water	Range 30% - 60% Visible	CO2 1118 e microbial	Rang Max 700 :	> Ambient	ccupants 21
Noticeable Od	Of NO	dama	age / staining	? gr	owth?	material affec		
Ceiling Type	2 x 4		No		No		None	
Wall Type	Drywall		Yes	_	Yes	1 square fo	oot in A/C clo	set
Flooring	8 x 8		No		No		None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Re	quired	
Ceiling	Yes	No	No					
Walls	No	Yes	Yes		Cle	an as appropria	ate	
Flooring	No	Yes	Yes		Cl	ean and sanitiz	:e	
HVAC Supply	Grills No	Yes	Yes		Cle	an as appropria	ate	
HVAC Return	Grills No	Yes	Yes		Cle	an as appropria	ate	
Ceiling at Sup Grills	ply Yes	No	No					
Surfaces in Ro	oom No	Yes	Yes		Cle	an as appropria	ate	

Location Number

Observations

Findings (Building not owned by SBBC)

- Dust and dirt build up on walls
- Dust and debris on floor. Heavy rust stain near A/C closet.
- Dust and debris on HVAC supply and return grills
- Dust build up on environmental surfaces
- Windows not sealed properly
- Visible water staining and microbial growth (@1 square foot) at A/C closet baseboard previous water leak
- CO2 was elevated at the time of the assessment

- Clean walls
- Clean and sanitize flooring
- Clean HVAC supply and return grills
- Clean environmental surfaces throughout the room
- Evaluate windows and seal as necessary
- Evaluate wall in A/C closet at baseboard and repair/replace wall material as necessary.
- Evaluate HVAC system for proper operation and repair as appropriate to lower CO2

Thomp	son Academy	 Whiddon Roge 	rs Off Site		Evaluation Requested	October 28, 2010
Time of Day	9:00 am				Evaluation Date	November 5, 2010
Outdoor Cond	litions T	emperature	89.7	Relative Humidity	47.7 Ambie	ent CO2 391
Fish Room 6	Temperature 72.4	Range Rel 72 - 78	ative Humidity 53.5	Range 30% - 60%	CO2 Rai 1099 Max 700	nge # Occupants > Ambient 18
Noticeable O	dor No	da	Visible water mage / staining?	Visible microl growth?	bial Amount o	
Ceiling Type	2 x 4 L	ay In	Yes	No	3 0	eiling tiles
Wall Type	Dryw	rall	No	No		None
Flooring	Viny	/	Yes	No		Various
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective Action Re	equired
Ceiling	No	Yes	Yes	Re	emove and replace ce	iling tiles
Walls	Yes	No	No			
Flooring	No	Yes	Yes		Clean and saniti	ze
HVAC Supply	Grills Yes	No	No			
HVAC Return	Grills Yes	No	No			
Ceiling at Suր Grills	pply Yes	No	No			
Surfaces in R	oom No	Yes	Yes		Clean as appropr	iate

Location Number

Observations

Findings (Building not owned by SBBC)

- 3 stained and one broken ceiling tile
- Water staining in light fixtures
- Stain on floor
- Dust and debris on A/C filter
- Damaged wall in storage area
- Air freshener on wall
- Seals around windows are deteriorated and there is a gap under outside door
- Clutter in A/C closet area
- Dust build up on environmental surfaces

- Evaluate for cause of stained ceiling tiles and water in light fixtures and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Clean and sanitize flooring
- Remove and replace A/C filter
- Evaluate and repair wall in storage area
- Remove air fresheners
- Evaluate window seals and gap under outside door and repair as appropriate
- Reduce clutter in A/C closet area
- Clean environmental surfaces throughout the room

Thompson	Academy - \	Whiddon Roger	s Off Site		Evaluati	on Requested	October	28, 2010
Time of Day	9:00 am]			E	valuation Date	Novembe	er 5, 2010
Outdoor Condition	s Tei	mperature	89.7	Relative Humi	dity 47.7	Ambie	nt CO2	391
Fish Tem	perature	Range Rela	ative Humidity	Range	CO2	Ran	nge # (Occupants
Room 7		72 - 78	50.3	30% - 60%	616		> Ambient	12
Noticeable Odor	No		Visible water nage / staining	Visible m ? grow		Amount of material affect		
Ceiling Type	2 x 4 Lay	[,] In	Yes	Ye	s	5 c	eiling tiles	
Wall Type	Drywal	I	No	No	<u> </u>		None	
Flooring	Vinyl		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Re	equired	
Ceiling	No	Yes	Yes		Remove a	and replace ce	eiling tile	
Walls	Yes	No	No					
Flooring	No	Yes	Yes		Cle	ean and sanitiz	ze	
HVAC Supply Gril	Is No	Yes	Yes		Clea	n as approopr	iate	
HVAC Return Gril	Is No	Yes	Yes		Clea	an as appropri	ate	
Ceiling at Supply Grills	No	Yes	Yes		Clea	an as appropri	ate	
Surfaces in Room	No	Yes	Yes		Clea	an as appropri	ate	

Location Number

Observations

Findings (Building not owned by SBBC)

- 5 stained ceiling tiles 2 with visible microbial growth and 2 broken ceiling tiles in Room 7 and 2 stained ceiling tiles in adjacent corridor.
- Dust and debris on floor
- Dust and debris on HVAC supply and return grills and on ceiling at supply grills
- Dust build up on environmental surfaces
- Sporadic microbial growth on South door frame
- HVAC return grills is blocked by office desk

- Evaluate for cause of stained ceiling tiles and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Clean and sanitize flooring
- Clean HVAC supply and return grills and ceiling at supply grills
- Clean environmental surfaces throughout the room
- Wipe down South door frame as necessary
- Advise occupant to relocate desk to allow air flow to HVAC return grill

Inompson A	.cademy - v	vniddon Rogers	Off Site		⊏vaiuati	October 28, 2010
Time of Day 9	:00 am				E	Evaluation Date November 5, 2010
Outdoor Conditions	. Tem	nperature 8	39.7	Relative Humidity	47.7	Ambient CO2 391
Fish Tempo	erature _F	Range Relat	tive Humidity	Range	CO2	Range # Occupants
Room 8		2 - 78	49.4	30% - 60%	644	Max 700 > Ambient 10
Noticeable Odor	No		/isible water age / staining	Visible micro growth?		Amount of material affected
Ceiling Type	2 x 4 Lay	In	Yes	Yes		3 ceiling tiles
Wall Type	Drywall		No	No		None
Flooring	Vinyl		No	No		None
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Required
Ceiling	No	Yes	Yes	R	lemove	and replace ceiling tile
Walls	Yes	No	No			
Flooring	No	Yes	Yes		Cle	ean and sanitize
HVAC Supply Grills	s No	Yes	Yes		Clea	n as approopriate
HVAC Return Grills	s No	Yes	Yes		Clea	an as appropriate
Ceiling at Supply Grills	No	Yes	Yes		Clea	an as appropriate
Surfaces in Room	No	Yes	Yes		Clea	an as appropriate
bservations						
Findings (Building	not owned	by SBBC)				
- 3 stained ceiling tile		by czz,				
- Dust and debris on						
- Dust and debris on	HVAC supr	oly and return gr	ills and on ce	eiling at supply grills		
- Dust build up on en	vironmenta	l surfaces		-		
- Dust and debris on	A/C filters					
Building Owner:						
		eiling tiles and r	epair as appr	ropriate. Remove a	ınd repla	ce ceiling tiles as necessary.
- Clean and sanitize	flooring					

Clean HVAC supply and return grills and ceiling at supply grills

Clean environmental surfaces throughout the room

- Remove and replace A/C filters

IAQ Assessment

Location Number

<u> I nomp</u>	son Academy - V	vniddon Rogers	Off Site		aluation Requested [October 26, 2010
Time of Day	9:00 am				Evaluation Date	November 5, 2010
Outdoor Cond	itions Ten	nperature 8	9.7 F	Relative Humidity	47.7 Ambier	at CO2 391
			ive Humidity	Range CC		ge # Occupants
Room 18	69.4 7	2 - 78	51.5	30% - 60% 10	41 Max 700 :	> Ambient 4
Noticeable O	dor No	=	'isible water age / staining?	Visible microbia growth?	Amount of material affect	
Ceiling Type	2 x 4 Lay	In	No	No		None
Wall Type	Drywall		No	No		None
Flooring	Carpet		Yes	No	V	/arious
	Clean	Minor Dust / Debris	Needs Cleaning	C	orrective Action Re	quired
Ceiling	Yes	No	No			
Walls	No	Yes	Yes		Clean as appropria	ite
Flooring	No	Yes	Yes		Deep Clean	
HVAC Supply	Grills No	Yes	Yes		Clean as appropria	ite
HVAC Return	Grills No	Yes	Yes		Clean as appropria	ite
Ceiling at Sup Grills	oply No	Yes	Yes		Clean as appropria	ite
Surfaces in R	oom No	Yes	Yes		Clean as appropria	ite

Location Number

Observations

Findings (Building not owned by SBBC) - Student Services Room

- Dust and dirt build up on walls
- Heavy dust and dirt build up on floor
- Dust and debris on HVAC supply and return grills and on ceiling at supply grills
- Dust build up on environmental surfaces
- Excessive clutter in room
- Temperature was low at the time of the assessment
- North Restroom hot water running. Dust build up on exhaust fan
- South Restroom 1 stained ceiling tile and other tiles not properly seated. Dust build on exhaust fan.

- Clean walls
- Deep clean carpet
- Clean HVAC supply and return grills and ceiling at supply grills
- Clean environmental surfaces throughout the room
- Encourage occupant to reduce clutter to assist with cleaning efforts
- Evaluate HVAC system for proper operation and repair as appropriate to increase temperature -- note; AHU services multiple rooms.
- North Restroom repair hot water valve and clean exhaust fan
- South Restroom Remove and replace stained ceiling tile and ensure other tiles are properly seated. Clean exhaust fan.

Thompson A	cademy - Whiddon I	Rogers Off Site		Evaluation Requested October 28, 2010
Time of Day 9	:00 am			Evaluation Date November 5, 2010
Outdoor Conditions	Temperature	89.7	Relative Humidity	47.7 Ambient CO2 391
	Perature Range 72.4 72 - 78 No Drywall Drywall Carpet	Relative Humidity 47.5 Visible water damage / staining No No	30% - 60% Visible micro growth? No	material affected None None
	Clean Minor / Deb	ris Cleaning	No	Corrective Action Required
Ceiling Walls	No Ye	s Yes		Clean as appropriate
Flooring HVAC Supply Grills	No Ye			Deep Clean Clean as appropriate
HVAC Return Grills Ceiling at Supply Grills	Yes No			Clean as appropriate
Surfaces in Room	No Yes	Yes		Clean as appropriate
 Dust build up on en Excessive clutter in Building Owner: Clean walls Deep clean carpet Clean HVAC supply Clean environmenta 	up on walls build up on floor HVAC supply and re vironmental surface: room	eturn grills s	g efforts	

Location Number