

managing risk with responsibility

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Jeffrey S. Moquin, Director Risk Management Department

July 17, 2006

Signature on File

TO: Ms. Marisol Smith, Principal

West Hollywood Elementary School

FROM: Kenneth I. Partee, Project Manager

Occupational Health and Environmental Control

Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

FISH 142, 202, 204, 205, 206, 207, 208 and 223

On June 27, 2006 I conducted an assessment of FISH 142, 202, 204, 205, 206, 207, 208 and 223 at **West Hollywood Elementary School**. 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 has generated appropriate work orders 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 754-321-3200.

cc: Sam Gregg, Area Superintendent

Margaret Underhill, Area Director

Jeffrey S. Moquin, Director, Risk Management

Rodney Williams, Project Manager, Facilities and Construction Management

Diane Watts, Broward Teachers Union

Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1

Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

KP/tc Enc.

	West Hollyv	wood Elementar	ry School		Evaluation	n Requested	June 23, 2006
Time of Day	11:20 a.m.		_		Ev	aluation Date	June 27, 2006
Outdoor Condition	ons Tem	nperature 1	01.1 R	Relative Humidity	47.1	Ambien	t CO2 516
l		Range Rela	ative Humidity	Range	CO2	Rang	e # Occupants
142	71.4 7	72 - 78	55.6 3	30% - 60%	860	Max 700 >	Ambient
Noticeable Odor		dam	Visible water nage / staining?	Visible micro growth?		Amount of mate affected	
Ceiling Type	2 x 4 Lay		No	No	L		lone
Wall Type	Tackable	Э	Yes	No	L	See	Below
Flooring	Carpet		Yes	No		See	Below
	Clean	Minor Dust / Debris	Needs Cleaning		Correcti	ive Action Req	uired
Ceiling	Yes	No	No				
Walls	No	Yes	Yes		Repair/rep	place as appro	priate
Flooring	No	Yes	Yes		Evaluat	te for replacem	ent
HVAC Supply G	rills Yes	No	No				
HVAC Return Gr	rills Yes	No	No				
Ceiling at Supply Grills	у	Yes	Yes		Replac	ce as appropria	ate
Surfaces in Roo	m Yes	No	No				
Observations							
Findings: - West wall has vis - Carpet has heav - Dust/dirt impaction	y water stains	and odor	_				
Recommendation Site Based Maint - Continue to mon appropriate	tenance:	n for any signs	of microbial gro	wth as well as dus	st and debi	ris accumulatior	າ and clean as

- Evaluate cause of water intrusion. Remove water damaged walls (West) and repair/replace wall material as appropriate

Physical Plant Operations:

Evaluate carpet for replacement

Remove and replace ceiling tiles around HVAC supply grills

IAQ Assessment

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	W	est Holl	ywood Elem	entary School	<u>l</u>			Evaluati	ion Requesto	ed Jur	ne 23, 2006
Time of Day	11:2	20 a.m.						E	Evaluation Da	ate Jur	ne 27, 2006
Outdoor Condi	itions	Te	emperature	101.1		Relative Hun	nidity	47.1	Am	bient CO2	516
Fish	Tempe	rature	Range	Relative Hur	nidity	Range		CO2	ı	Range	# Occupants
202	73	3.5	72 - 78	54.9		30% - 60%		547	Max 7	700 > Amb	ient 2
Noticeable Od	dor [Yes		Visible w damage / st		Visible ? gro	microl owth?	bial	Amount of affect		
Ceiling Type		2 x 4 La	ıy In	No]		No			None	
Wall Type		Tacka	ble	Yes]	1	O			See Below	1
Flooring		Carpe	et	Yes]		No			See Belov	v
	(Clean	Minor D / Debr		eds aning			Correc	ctive Action	Required	
Ceiling		No	Yes] <u>Y</u>	es			Clea	an as appro	priate	
Walls		No	Yes] <u>Y</u>	es		R	Repair/re	eplace as a	ppropriate	
Flooring		No	Yes] <u>Y</u>	es			Evalua	ate for repla	acement	
HVAC Supply	Grills	No	Yes] <u>Y</u>	es		Cl	ean witl	h Wexcide	disinfectar	nt
HVAC Return	Grills	No	Yes] <u>Y</u>	es		Cl	ean witl	h Wexcide	disinfectar	nt
Ceiling at Sup Grills	ply	No	Yes] <u>Y</u>	es			Repla	ace as appr	opriate	
Surfaces in Ro	oom	No	Yes	<u> </u>	es			Clea	an as appro	priate	

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June 23, 2006

Location Number Evaluation Requested

Observations

Findings:

- Dust build up on ceiling tiles
- Northeast section and East corner of wall have heavy moisture damage
- Carpet has heavy water stains and odor
- Dust/dirt impaction on ceiling tiles at HVAC supply grills
- Dust and debris on HVAC supply and return grills
- Dust build up on environmental surfaces throughout the room

Recommendations:

Site Based Maintenance:

- Clean ceiling tiles as appropriate
- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Thoroughly clean all environmental surfaces throughout the room
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate cause of water intrusion. Remove water damaged walls (Northeast section and East corner) and repair/replace wall material as appropriate
- Evaluate carpet for replacement
- Remove and replace ceiling tiles around HVAC supply grills

West Hollywood Elementary School Evalu	uation Requested June 23, 2006
Time of Day 11:20 a.m.	Evaluation Date June 27, 2006
Outdoor Conditions Temperature 101.1 Relative Humidity 4	7.1 Ambient CO2 516
Fish Temperature Range Relative Humidity Range CO2 204 72 - 78 30% - 60%	Range # Occupants Max 700 > Ambient
Noticeable Odor Yes Visible water damage / staining? Visible microbial growth?	Amount of material affected
Ceiling Type 2 x 4 Lay In No No	None
Wall Type Tackable Yes No	See Below
Flooring Carpet Yes No	See Below
Clean Minor Dust Needs / Debris Cleaning	rrective Action Required
Ceiling Yes No No	
Walls No Yes Yes Repair	ir/replace as appropriate
Flooring No Yes Yes Eva	aluate for replacement
HVAC Supply Grills Yes No No	
HVAC Return Grills Yes No No	
Ceiling at Supply Yes No No Grills	
Surfaces in Room Yes No	
L	
Findings: - Northeast corner of wall has heavy moisture damage - Carpet has heavy water stains and odor	
Recommendations: Site Based Maintenance: - Continue to monitor this location for any signs of microbial growth as well as dust and appropriate	debris accumulation and clean as
Physical Plant Operations: - Evaluate for cause of water intrusion. Remove water damaged walls (Northeast corne appropriate - Evaluate carpet for replacement	er) and repair/replace wall material as

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	W	est Hollywo	od Elem	entary Scho	ool			Evaluat	ion Re	quested	Jun	ie 23, 2	2006
Time of Day	11:2	0 a.m.						E	Evalua	tion Date	Jun	ie 27, 2	2006
Outdoor Condi	itions	Temp	erature	101.1	F	Relative Hu	ımidity	47.1		Ambi	ent CO2	51	6
Fish	Temper	ature R	ange	Relative Hu	midity	Range		CO2		Ra	nge	# Occ	cupants
205		72	- 78		3	30% - 60%				Max 700) > Ambi	ent 🗌	
Noticeable Od	lor [Yes		Visible damage / s			le microl rowth?	bial	Amo	unt of ma			
Ceiling Type		2 x 4 Lay Ir	n	No			No				None		
Wall Type		Tackable		Yes			No			S	ee Below		
Flooring		Carpet		Yes			No			5	See Below	/	
	(Clean	Minor D / Debr		eeds eaning			Corre	ctive A	Action R	equired		
Ceiling		Yes	No		No								
Walls		No	Yes] [Yes		R	epair/r	eplace	e as app	ropriate		
Flooring		No	Yes		Yes			Evalu	ate fo	replace	ement		
HVAC Supply	Grills	Yes	No] [No								
HVAC Return	Grills	Yes	No		No								
Ceiling at Sup Grills	ply	Yes	No		No								
Surfaces in Ro	oom	Yes	No		No								
bservations													
Findings: - Southeast corr - Carpet has hea				ure damage									
Recommendati Site Based Mai - Continue to mo appropriate	intenar		for any s	igns of micr	obial gro	owth as wel	l as dust	and de	ebris ad	ccumulat	ion and c	clean as	6
Physical Plant - Evaluate for ca appropriate - Evaluate carpe	ause of	water intru		nove water	damage	d walls (So	utheast o	corner)	and re	pair/repl	ace wall ı	materia	l as

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	West Ho	llywood Elemei	ntary School		Evaluat	ion Requested	June 23, 200	סנ
Time of Day	11:20 a.m.				ı	Evaluation Date	June 27, 200)6
Outdoor Condi	tions T	emperature	101.1	Relative Humidi	ty 47.1	Ambient	CO2 516	
	Temperature	Range F	Relative Humidity	Range	CO2	Range	# Occu	pants
206	71.4	72 - 78	68.9	30% - 60%	542	Max 700 >	Ambient	
Noticeable Od	or Yes		Visible water damage / staining	Visible mid growth		Amount of mater affected	ial	
Ceiling Type	2 x 4 L	ay In	No	No]	N-	one	
Wall Type	Tack	able	Yes	No]	See	Below	
Flooring	Carp	pet	Yes	No]	See	Below	
	Clean	Minor Du / Debris			Corre	ctive Action Requ	uired	
Ceiling	Yes	No	No					
Walls	No	Yes	Yes		Repair/r	eplace as approp	oriate	
Flooring	No	Yes	Yes		Evalu	ate for replaceme	ent	
HVAC Supply	Grills Yes	No	No					
HVAC Return (Grills Yes	No	No					
Ceiling at Sup Grills	ply Yes	No	No					
Surfaces in Ro	oom Yes	No	No					
bservations								
Findings: - North section of a Carpet has head to be a Humidity level	avy water stai		nage					
Recommendati	ntenance:	ation for any sig	ins of microhial a	rowth as well as d	ust and de	phris accumulation	and clean as	

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Location Number

appropriate

Physical Plant Operations:

- Evaluate for cause of water intrusion. Remove water damaged walls (North section of East wall) and repair/replace wall material as appropriate
- Evaluate carpet for replacement Evaluate and adjust/repair HVAC system to lower humidity level

	West Hollyw	ood Elementa	ry School		Evaluati	on Requested	June 23, 2006
Time of Day	11:20 a.m.				E	Evaluation Date	June 27, 2006
Outdoor Condi	tions Tem	perature 1	01.1	Relative Humidity	47.1	Ambier	nt CO2 516
Fish	Temperature _F	Range Rela	ative Humidity	Range	CO2	Ran	ge # Occupants
207	71.3 7	2 - 78	59.1	30% - 60%	567	Max 700 :	> Ambient
Noticeable Od	lor Yes		Visible water nage / stainingʻ	Visible micro growth?	bial	Amount of mat affected	erial
Ceiling Type	2 x 4 Lay	In	No	No			None
Wall Type	Tackable)	No	No			None
Flooring	Carpet		Yes	No		Se	e Below
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	tive Action Re	quired
Ceiling	Yes	No	No				
Walls	Yes	No	No				
Flooring	No	Yes	Yes		Evalua	ate for replacer	ment
HVAC Supply	Grills Yes	No	No				
HVAC Return	Grills Yes	No	No				
Ceiling at Sup Grills	ply Yes	No	No				
Surfaces in Ro	oom Yes	No	No				
bservations							
Findings: - Carpet has hea	avy water stains	and odor					
Recommendati	ions:						
Site Based Mai	intenance:						
 Continue to mo appropriate 	onitor this location	n for any signs	of microbial gr	owth as well as dus	st and de	bris accumulatio	on and clean as
Physical Plant							
- Evaluate carpe	et for replacemen	t					

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	V	est Hollywo	ood Elem	entary	School				Evaluat	ion Re	quested	Jun	e 23, 200	06
Time of Day	11:2	20 a.m.							ı	Evalua	tion Date	Jun	e 27, 200	06
Outdoor Condi	tions	Temp	perature	101	1.1	Rela	ative Hu	ımidity	47.1		Ambie	ent CO2	516	
Fish	Tempe	rature R	ange	Relativ	ve Humidity	R	Range		CO2		Rar	nge	# Occu	pants
208		72	2 - 78				60% ·				Max 700	_	ent	
Noticeable Od	lor [Yes			sible water ge / staining	j?		le micro rowth?		Amo	unt of ma affected	terial		
Ceiling Type		2 x 4 Lay I	n	[No			No				None		
Wall Type		Tackable		[Yes			No		See Below				
Flooring		Carpet		[Yes			No			S	ee Below		
		Clean	Minor D		Needs Cleaning				Corre	ctive A	Action Re	equired		
Ceiling		Yes	No]	No									
Walls		No	Yes]	Yes			ı	Repair/r	eplac	e as appi	ropriate		
Flooring		No	Yes]	Yes				Evalu	ate fo	r replace	ment		
HVAC Supply	Grills	Yes	No]	No									
HVAC Return	Grills	Yes	No]	No									
Ceiling at Sup Grills	ply	Yes	No		No									
Surfaces in Ro	oom	Yes	No]	No									
bservations														
Findings: - South wall and - Carpet has hea				crobial (growth and	mois	ture dan	nage						
Recommendati Site Based Mai - Continue to mo appropriate	ntena		for any s	signs of	microbial g	rowth	n as wel	l as dus	st and de	ebris ad	ccumulati	on and cl	lean as	
Physical Plant - Evaluate for ca appropriate - Evaluate carpe	ause o	f water intru		move w	ater damag	jed w	alls (So	uth and	West) a	and rep	air/replac	ce wall ma	aterial as	3
I														

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	West Holly	wood Elem	entary School		Evalu	ation Requested	June 23, 2006	
Time of Day	11:20 a.m.					Evaluation Date	June 27, 2006	
Outdoor Condition	ons Ten	nperature	101.1	Relative Hum	idity 47	7.1 Ambie	ent CO2 516]
Fish Te	mperature	Range	Relative Humidi	^{ty} Range	CO2	Rar	nge # Occupa	nts
223	72.3	72 - 78	63.5	30% - 60%	695	Max 700	> Ambient	
Noticeable Odo	r Yes		Visible wate damage / staini		microbial wth?	Amount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	N	o		None	
Wall Type	Tackabl	е	No	N	lo		None	
Flooring	Carpet		Yes	N	lo	S	ee Below	$\supset $
	Clean	Minor D			Cor	rective Action Re	equired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	No	Yes	Yes		Eva	luate for replace	ment	
HVAC Supply G	rills Yes	No	No					
HVAC Return G	rills Yes	No	No					
Ceiling at Suppl Grills	y Yes	No	No					
Surfaces in Roo	m Yes	No	No					
L Observations								
Findings:								
- Carpet has heav - Humidity level is			arating and odor					
Recommendatio Site Based Maint - Continue to mor appropriate	tenance:	on for any s	igns of microbial	growth as well a	s dust and	debris accumulati	on and clean as	
Physical Plant O - Evaluate carpet - Evaluate and ad	for replacemer		to lower humidit	y level				

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June 23, 2006

Location Number Evaluation Requested