

Appendix-3

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Parameters of energy efficiency of building envelop based on the Egyptian code of Energy Efficiency for residential buildings – Cairo and Delta region - (Not air conditioning buildings)				Testing the possibility for applications in the cultural heritage buildings				
				Registered buildings related to Law 117 of 1983		Registered buildings related to Law 117 of 1983		
				Facades	Courtyard	Facades	Courtyard	
Absorption of external surfaces	Roof		0.70					
	Wall	North	0.38 dark color					
			0.50 medium color					
			0.70 light color					
		N/E or N/W	0.38 dark color					
			0.50 medium color					
			0.70 light color					
		East or	0.38 dark color					
			0.50 medium color					
			0.70 light color					
		S/E or S/W	0.38 dark color					
			0.50 medium color					
			0.70 light color					
		South	0.38 dark color					
			0.50 medium color					
			0.70 light color					
Thermal resistance (R-Value required)	Roof		2.70					
	Wall	North	0.55					
			0.59					
			0.67					
		N/E or N/W	0.74					
			0.85					
			1.03					
		East or	0.92					
			1.08					
			1.35					
		S/E or S/W	0.82					
			0.95					
			1.17					
		South	0.67					
			0.75					
			0.89					
Thermal	ROOF		0.4	2.30				
			0.6	2.10				
			0.8	1.90				
	Wall	North	0.4	0.15				
				0.19				
				0.27				

Openings			N/E or N/W	0.6	N.R/ N.R/N.R										
				0.8	N.R/ N.R/N.R										
				0.4	0.34										
					0.45										
					0.63										
				0.6	0.14										
					0.25										
					0.43										
				0.8	N.R										
					N.R										
					0.23										
				East or West	0.4	0.52									
						0.68									
						0.95									
					0.6	0.32									
						0.48									
						0.75									
					0.8	0.12									
						0.28									
						0.55									
				S/E or S/W	0.4	0.42									
						0.55									
						0.77									
					0.6	0.22									
						0.35									
						0.57									
					0.8	N.R									
						0.15									
						0.37									
				South	0.4	0.27									
						0.35									
						0.49									
					0.6	N.R									
						0.15									
						0.29									
					0.8	N.R/N.R/N.R									
North	SHGC= N.R	SGR= N.R													
	SHGC= N.R	SGR= N.R													

	WWR = more 30 %		SHGC= 0.71	SGR= 40%				
	WWR= more 30 %		SHGC= 0.67	SGR= 50%				
	WWR= less 10%	N/E or N/W	SHGC= 0.65	SGR= 50%				
	WWR= between 10% - 20%		SHGC= 0.55	SGR= 60%				
	WWR = between 20% - 30%		SHGC= 0.45	SGR= 70%				
	WWR= more 30 %		SHGC= N.A	SGR= N.A				
	WWR= less 10%	East or West	SGHC= 0.55	SGR= 60%				
	WWR= between 10% - 20%		SGHC= 0.45	SGR= 70%				
	WWR = between 20% - 30%		SGHC= N.A	SGR= N.A				
	WWR= more 30 %		SGHC= N.A	SGR= N.A				

Openings - SHGC		WWR = less 10%	S/E or S/W	SHGC= 0.55	SGR= 60%				
		WWR = between 10% - 20%		SHGC= 0.45	SGR= 70%				
		WWR = between 20% - 30%		SHGC= N.A	SGR= N.A				
		WWR = more 30 %		SHGC= N.A	SGR= N.A				
		WWR = less 10%	South	SHGC= 0.71	SGR= 50%				
		WWR = between 10% - 20%		SHGC= 0.64	SGR= 60%				
		WWR = between 20% - 30%		SHGC= 0.55	SGR= 70%				
		WWR = more 30 %		SHGC= N.A	SGR= N.A				