# EMMA CONN ACTIVE LEARNING AND TECHNOLOGY MAGNET ELEMENTARY

SUPER DESIGN NARRATIVE

WAKE COUNTY PUBLIC SCHOOLS 1515 ROCK QUARRY ROAD RALEIGH, NC 27610

PEARCE BRINKLEY CEASE + LEE, PA 333 FAYETTEVILLE STREET, SUITE 1000 RALEIGH, NC 27601

CLH DESIGN, PA 125 EDINBURGH DRICE SOUTH, SUITE 310 CARY, NC 27511

THE WOOTEN COMPANY 120 NORTH BOYLAN AVENUE RALEIGH, NC 27603





• ANALYSIS

#### SITE ANALYSIS

• Non-compliant with City of Raleigh Fire truck access requirements

•Parent stacking length insufficient to support the high volume of parent vehicles

•Parent and bus drop-off canopies do not exist

•Limited space of site for buses to park while waiting for students

•Competing use of bus lane and private transportation vans in same loop

•Service yard access competes with traffic needs

•Limited expansion allowed and still stay within the impervious surface area limitations

•Portion of site must be dedicated for tree conservation









# **1955 BUILDING ANALYSIS**

•Cafeteria insufficient size for full 800 student population and serving line

•Food Service Area insufficient size

•Location of service yard competes with traffic to front entrance to school

•Service yard is not walled off for restricted access



#### **1955 BUILDING ANALYSIS**

- Classroom spaces meet current BOE and DPI space standards or are generally within allowable limit
- •Student and staff toilets throughout do not meet ADA requirements. Number is not an issue, as much as accessibility
- •All classrooms should have upgrades with furniture and equipment to meet current system guidelines

•HVAC is provided by fan coil units, which are noisy and conflict with instructional delivery, and must be serviced by piping, which is exposed throughout the building



PRIOR TO 1996 ADDITION

e- 002

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# CODE ISSUES:

•Building exceeds allowable areas

•Building is not compartmentalized into fire areas

•Corridor walls are not built as rated construction

•Doors are not labeled and have glass transoms above

Occupancies are not separated

•Vertical openings between floors are not rated

•Smoke detectors only installed in the ductwork

•Stairway does not have smoke control

•The building does not have an elevator. It uses the 1997 addition elevator to be ADA compliant

•Emergency lighting is compliant with one exception. It does not extend to the exterior to light the common path of travel. This condition is not permitted.

•Building does not have an automatic sprinkler system

TABLE 34 TO. /: SUMIMARY SHEET BUILDING CODE			1955 BUILDING		
Existing Occupancy: Educational		Proposed	Occupancy:		
		<u>Education</u>	al		
Year Building was Constructed: <u>1955</u>		Number o	f Stories: 2		
		Height in	feet: <u>24'-4"</u>		
Percentage of Open Perimeter: <u>65%</u>		Percentag	ge Height Reduction:		
74 22		<u>0%</u>	52' 1825		
Completely Suppressed: <u>No</u>		Corridor V	Vall Rating: <u>1 Hour</u>		
		Required;	None Provided		
Compartmentalization: <u>No</u>		Required	Door Closers: <u>No</u>		
Fire Resistance Rating of Vertical opening enclosures	s: <u>1 Hour Required; N</u>	<u>one Provided</u>			
Type of HVAC System: Central Chiller/Boiler piped war	<u>ter to fan coil units</u> , s	erving <u>2 floors</u>			
Automatic Fire Detection: Yes		Type and	location:		
Fire Alarm System:		Туре:			
Smoke Control:		Туре:			
Adequate Exit Routes: <u>Yes</u>		Dead End	s: <u>No</u>		
Maximum exit access travel distance:		Elevator Controls: <u>N/A</u>			
Means of Egress Emergency Lighting:		Mixed Occ	cupancies: <u>Yes</u>		
Safety Parameters	Fire Safety	Means of Egress	General Safety		
3410.6.1 Building Height	2.42	2.42	2.42		
3410.6.2 Building Area	-11.12	-11.12	-11.12		
3410.6.3 Compartmentalization	0.00	0.00	0.00		
3410.6.4 Tenant and Dwelling Unit Separations	-4,00	-4.00	-4.00		
3410.6.5 Corridor Walls	-5.00	-5.00	-5.00		
3410.6.6 Vertical Openings	-14.00	-14.00	-14.00		
3410.6.7 HVAC Systems	-5.00	-5.00	-5.00		
3410.6.8 Automatic Fire Detection	0.00	0.00	0.00		
3410.6.9 Fire Alarm Systems	0.00	0.00	0.00		
3410.6.10 Smoke Control	****	0.00	0.00		
3410.6.11 Means of Egress	****	10.00	10.00		
3410.6.12 Dead Ends	****	2.00	2.00		
3410.6.13 Maximum Exit Access Travel Distance	****	4.80	4.80		
3410.6.14 Elevator Control		0.00	0.00		
3410.6.15 Means of Egress Emergency Lighting	****				
3410.6.16 Mixed Occupancies	0.00	****	0.00		
3410.6.17 Automatic Sprinklers	-1.00	-1÷2 =-0.50	-1.00		
3410.6.18 Incidental Use	0.00	0.00	0.00		
Building Score – Total Value	-37.70	-20.40	-20.90		
Minimum Value Required	23.00	34.00	34.00		



#### MEDIA CENTER ANALYSIS

•RLV insufficient size to support 800 student population

•Lack of classroom support spaces require that Media Center support spaces be used for other than Media Center support

•Workroom is too small

•Production studio is no longer part of space standards

•Existing casework for the Media Center does not meet ADA requirements

•Toilets do not meet ADA accessibility requirements



**1990 MEDIA CENTER ADDITION** 

# CODE ISSUES:

•Corridor walls are not built as rated construction

Doors are not labeled

Occupancies are not separated

•Smoke detectors only installed in the ductwork

•The building does not have an elevator. It uses the 1997 addition elevator to be ADA compliant

•Emergency lighting is compliant with one exception. It does not extend to the exterior to light the common path of travel. This condition is not permitted. This is a change in code requirements since the original construction

•Building does not have an automatic sprinkler system

TABLE 3410.7: SUMMARY SHEET BUILDING CODE		MEDI	A CENTER BUILDING		
Existing Occupancy: Assembly - 3		Proposed Occupancy: Asser			
Year Building was Constructed: <u>1989</u>	Number of Stor	Number of Stories: 2			
		Height in feet:	<u>19'-5"</u>		
Percentage of Open Perimeter: <u>54%</u>		Percentage Hei	ight Reduction: <u>0%</u>		
Completely Suppressed: <u>No</u>		Corridor Wall Ra	ating: <u>1 Hour</u>		
		Required; None	<u>Provided</u>		
Compartmentalization: <u>No</u>		Required Door	Closers: <u>No</u>		
Fire Resistance Rating of Vertical opening enclosures	: <u>Not Applicable</u>				
Type of HVAC System: Central Chiller/Boiler piped wat	ter to AHU				
Automatic Fire Detection: <u>Yes</u>		Type and locati	on:		
Fire Alarm System:		Туре:			
Smoke Control:		Туре:			
Adequate Exit Routes: <u>Yes</u>		Dead Ends: <u>No</u>	<u>)</u>		
Maximum exit access travel distance:		Elevator Contro	ls: <u>N/A</u>		
Means of Egress Emergency Lighting:		Mixed Occupan	cies: <u>Yes</u>		
Safety Parameters	Fire Safety	Means of Egress	General Safety		
3410.6.1 Building Height	2.84	2.84	2.84		
3410.6.2 Building Area	7.07	7.07	7.07		
3410.6.3 Compartmentalization	10.00	10.00	10.00		
3410.6.4 Tenant and Dwelling Unit Separations	4.00	4.00	4.00		
3410.6.5 Corridor Walls	-5.00	-5.00	-5.00		
3410.6.6 Vertical Openings	2.00	2.00	2.00		
3410.6.7 HVAC Systems	-5.00	-5.00	-5,00		
3410.6.8 Automatic Fire Detection	0.00	0.00	0.00		
3410.6.9 Fire Alarm Systems	0.00	0.00	0.00		
3410.6.10 Smoke Control	****	0.00	0.00		
3410.6.11 Means of Egress	****	2.00	2.00		
3410.6.12 Dead Ends	****	0.00	0.00		
3410.6.13 Maximum Exit Access Travel Distance	****	13.60	13.60		
3410.6.14 Elevator Control		0.00	0.00		
3410.6.15 Means of Egress Emergency Lighting	****	NP	NF		
3410.6.16 Mixed Occupancies	0.00	****	0.00		
3410.6.17 Automatic Sprinklers	0.00	0÷2 =0.00	0.00		
3410.6.18 Incidental Use	0.00	0.00	0.00		
Building Score – Total Value	15.91	31.51	31.51		
Minimum Value Required	18.00	29.00	29.00		

# **1997 BUILDING ANALYSIS**

• Classroom spaces meet current BOE and DPI space standards or are generally within allowable limit

•Requires emergency lighting at exterior path of travel to meet code requirements

•Ground floor toilet location is remote from cafeteria



# **1997** CLASSROOM ADDITION ANALYSIS

•Location of administration on second floor is an issue for visitor control and wayfinding





# CODE ISSUES:

•Building is not compartmentalized into areas 15,000 SF or less

•Vertical openings separated by one hour construction

•Smoke detectors only installed in the ductwork

•Emergency lighting is compliant with one exception. It does not extend to the exterior to light the common path of travel. This condition is not permitted. This is a change in code requirements since the original construction

TABLE 3410.7: SUMMARY SHEET BUILDING CODE			1997 BUILDIN			
Existing Occupancy: Educational		Proposed Occ	upancy: <u>Educational</u>			
Year Building was Constructed: 1997	Number of Sto	Number of Stories: 2				
,		Height in feet:	30'-0"			
Percentage of Open Perimeter: 65%		Percentage He	eight Reduction: 0%			
Completely Suppressed: No		Corridor Wall F	Rating: 1 Hour			
		Required; 1 ho	our provided			
Compartmentalization: No, Not required		Required Door	Closers: <u>No</u>			
Fire Resistance Rating of Vertical opening enclosures	: 1 Hour Required; N	one Provided				
Type of HVAC System: Central Chiller/Boiler piped wat	ler to AHU, serving 2 I	loors				
Automatic Fire Detection: Yes		Type and loca	tion:			
Fire Alarm System:		Туре:				
Smoke Control:		Type:				
Adequate Exit Routes: Yes		Dead Ends: N	0			
Maximum exit access travel distance:		Elevator Contr	ols: <u>N/A</u>			
Means of Egress Emergency Lighting:		Mixed Occupa	ncies: Yes			
Safety Parameters	Fire Safety	Means of Egress	General Safety			
3410.6.1 Building Height	2.00	2.00	2.00			
3410.6.2 Building Area	6.42	6.42	6.42			
3410.6.3 Compartmentalization	0.00	0.00	0.00			
3410.6.4 Tenant and Dwelling Unit Separations	0.00	0.00	0.00			
3410.6.5 Corridor Walls	0.00	0.00	0.00			
3410.6.6 Vertical Openings	3.50	3.50	3.50			
3410.6.7 HVAC Systems	0.00	0.00	0.00			
3410.6.8 Automatic Fire Detection	0.00	0.00	0.00			
3410.6.9 Fire Alarm Systems	0.00	0.00	0.00			
3410.6.10 Smoke Control	****	1.00	1.00			
3410.6.11 Means of Egress	****	8.00	8.00			
3410.6.12 Dead Ends	****	2.00	2.00			
3410.6.13 Maximum Exit Access Travel Distance	****	10.20	10.20			
3410.6.14 Elevator Control	2.00	2.00	2.00			
3410.6.15 Means of Egress Emergency Lighting	****	NP	NP			
3410.6.16 Mixed Occupancies	0.00	****	0.00			
3410.6.17 Automatic Sprinklers	0.00	0÷2 =0.00	0.00			
3410.6.18 Incidental Use	-1.00	-1.00	-1.00			
Building Score - Total Value	12.92	34.12	34.12			
Minimum Value Required	23.00	34.00	34.00			



• PROPOSED SCHEMES



GROUND FLOOR ORGANIZATION DIAGRAM - SCHEME A



SCALE: 50" = 1"



Date: April 2008



# GROUND FLOOR ORGANIZATION DIAGRAM - SCHEME B



# EMMA CONN ELEMENTARY SCHOOL

Brookside Avenue, Raleigh, NC







# GROUND FLOOR ORGANIZATION DIAGRAM - SCHEME C





#### EMMA CONN ELEMENTARY SCHOOL

Brookside Avenue, Raleigh, NC



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# GROUND FLOOR ORGANIZATION DIAGRAM - SCHEME D



# EMMA CONN ELEMENTARY SCHOOL

Brookside Avenue, Raleigh, NC













COMPARISONS



#### SCHEME A - ADVANTAGES:

Provides the least amount of new construction

Project can be phased to move the existing population into the new while the renovation of the 1955 building occurs

Existing boiler room with equipment can be maintained, providing some savings

Provides Administration Space at Entrance with minimum amount of renovation

Provides space for 4 future mobile units

# SCHEME A - DISADVANTAGES:

Significant amount of renovation work creates many classrooms that have inferior quality – lower ceiling heights

Replacement of HVAC to current standards using Air Handling Units and VAV terminal units is not feasible in the 1955 building because of space limitations. HVAC would be provided by placing Vertical fan coil units in each classroom space, taking up floor area for mechanical systems.

Phased Construction has premium cost

Requires construction of retaining walls on the north and east sides to provide required fire truck access

Remote location from existing toilets would require each mobile classroom to have separate toilet or provide group toilet mobile unit.

# ISSUES WITH REUSE OF EXISTING BUILDING





# SCHEME B - ADVANTAGES:

Provides the least intensive renovation of existing buildings since classrooms and support spaces remain as in the existing use

Project can be phased to move the existing population into the new while the renovation of the 1955 building occurs Minimizes the amount of site disturbance Maximizes the amount of existing playfield space that can remain.

Provides space for 4 future mobile units.

### SCHEME B - DISADVANTAGES:

Significant amount of renovation work creates many classrooms that have inferior quality – lower ceiling heights

New construction at west end is in the most congested area of site.

This scheme does not solve the conflict at the main entry and service area

First grade classroom area is a high traffic corridor

Replacement of HVAC to current standards using Air Handling Units and VAV terminal units is not feasible in the 1955 building because of space limitations. HVAC would be provided by placing Vertical fan coil units in each classroom space, taking up floor area for mechanical systems.

# Phased project has premium cost

Requires construction of retaining walls on the north side to provide required fire truck access

Remote location from existing toilets would require each mobile classroom to have separate toilet or a group toilet unit



#### SCHEME C - ADVANTAGES:

- Three-story scheme has the most compact footprint
- First and kindergarten classrooms are grouped on the same level
- Relieves the congestion near the main entrance
- Single phase construction requires that timeline would be shorter, and therefore reducing general condition costs
- Removal of existing building allows for the complete replacement of HVAC to current standards
- Service area is moved to the rear, so access is out of congested area near the parent drop-off
- Provides space for four future mobile classrooms
- Classroom wing can be oriented to implement day-lighting into classrooms

# SCHEME C- DISADVANTAGES:

New scheme requires demolition of existing building, and therefore the mechanical Systems will go down during construction. The existing Media Center and the 1997 Additions will be unusable until the new systems installed and working

Kindergarten and First Grade Students must access the common spaces using stairs

Existing classrooms are not usable during the construction of the new structure because of the existing mechanical system. Requires use of a swing campus

Requires construction of a retaining wall at the southeast corner to provide for the fire lane



SCHEME D - ADVANTAGES:

- Relieves the congestion near the main entrance
- First and kindergarten classrooms are grouped on the same level
- Service area is moved to the rear, so access is out of congested area near parent drop-off
- Provides space for 4 future classrooms Larger PE area with stage remains

# SCHEME D - DISADVANTAGES:

New scheme requires demolition of existing building, and therefore the mechanical Systems will go down during construction. The existing Media Center and the 1997 Additions will be unusable until the new systems installed and working

Replacement of HVAC to current standards using Air Handling Units and VAV terminal units is not feasible in the remaining 1955 building classrooms because of space limitations. HVAC would be provided by placing vertical fan coil units in each classroom space, taking up floor area for mechanical systems.

Requires construction of small sections of retaining wall at the north end to provide construction of the fire lane

High impact on existing playfield



# SCHEME E - ADVANTAGES:

More compact footprint

Relieves the congestion near the main entrance

Service area is moved to the rear, so access is out of congested area near parent dropoff

First and Kindergarten classrooms are grouped on the same level, near the administration area

Provides space for 4 future classrooms

New classroom wing can be located to maximize high performance building orientation

#### SCHEME E - DISADVANTAGES:

New scheme requires demolition of existing building, and therefore the mechanical Systems will go down during construction. The existing Media Center and the 1997 Additions will be unusable until the new systems installed and working

Kindergarten and First Grade students must access the common spaces using stairs

Remote location from existing toilets would require each mobile classroom to have separate toilet or group toilet unit





# SCHEME A COSTS



SCHEME A



GROUND FLOOR	AREA	UN	IT COSTS	T	OTAL COSTS
DEMOLITION					
<ul> <li>SERVICE YARD</li> </ul>	535 SF	\$	5.00	\$	2,675
COOLER / FREEZER	380 SF	\$	5.00	\$	1,900
RENOVATION					
<ul> <li>EXISTING CAFETERIA INTO ADMIN SPACE</li> </ul>	5,430 SF	\$	112.00	\$	608,160
<ul> <li>ART ROOM INTO KINDERGARTEN CLASS W/TOILET</li> </ul>	1,295 SF	\$	112.00	\$	145,040
REMAINDER 1998 BUILDING (SPRINKLERS, CLGS)	15,230 SF	\$	10.50	\$	159,915
MAIN FLOOR					
RENOVATION					
EAST WING 1955 – REPURPOSE CLASSROOMS	11,608 SF	\$	117.00	\$	1,358,136
<ul> <li>WEST / NORTH WINGS - RENOVATE EXIST. CLRMS</li> </ul>	19,690 SF	\$	112.00	\$	2,205,280
PE AREA – RENOVATE	6,664 SF	\$	112.00	\$	746,368
MEDIA CENTER	6,097 SF	\$	100.00	\$	609,700
1998 BUILDING – ADMIN TO SSS, CLRM SPACE	2,570 SF	\$	112.00	\$	287,840
• REMAINDER 1998 – (SPRINKLERS, CLGS)	9,205 SF	\$	10.50	\$	96,653
NEW CONSTRUCTION					
<ul> <li>CLASSROOM AREA (EAST END)</li> </ul>	10,585 SF	\$	175.00	\$	1,852,375
<ul> <li>HIGH BAY - CAFETERIA, MECH (SOUTH END)</li> </ul>	12,500 SF	\$	175.00	\$	2,817,500
SERVICE YARD	3,400 SF	\$	60.00	\$	204,000
SECOND FLOOR					
NEW CONSTRUCTION					
CLASSROOM AREA (EAST END)	10,585 SF	\$	175.00	\$	1,852,375
TOTAL BUILDING ONLY COSTS				\$	12,317,917
SITE					
<ul> <li>PARENT, BUS LOOP CANOPIES</li> </ul>				\$	150,000
<ul> <li>PREMANUFACTURED CANOPY</li> </ul>	1,400 SF	\$	55.00	\$	77,000
SITE				\$	1,540,900
BUS LOOP "1"	77)			\$	85,000
TOTAL COSTS SCHEME A				\$	14,170,817

#### \$ 14,170,817

#### SCHEME A SITE COSTS BREAKDOWN



PROJE Conn	ION OF PROBABLE CONSTRUCTION COST         DATE           WORK         4/28/08 (REV 5/14/08)           ECT NAME         PROJECT NO           Elementary School         07-163           ION         BY			1	Eff		
Raleig	h, NC		CLH	ŝ			1.1
Item	Description	Quantity	Unit		Unit Price		Total Cost
	BIR ROLL						
_	SCHEME A	-	144				
- 1	Mobilization & Staking	3	76	5	40,800.00	ş	40,600.0
4	Building Additions: Demo, earthwork, sidewalks	1	LS	s	125,000.00	s	125,000.0
5	Courtyard Demo earthwork ovmt landscape	1	LS	5	40 000 00	5	40,000 0
6	New parking lot	1	LS	5	155 000 00	s	155 000 0
7	Ex Darking car loop reconfiguration		10	12	20,000,00	s.	30,000,0
8	New Service Court		1.5	5	20,000,00	8	20,000,0
10	New Ere Lane		18	6	85 000 00	5	85 000 0
12	New Fire Lane Datalaine Maile		18	6	70,000,00	8	70,000 (
14	New Pre Lane Ketaining Walls		10	0	35,000,00	0	35,000.0
1.0	New Pre-K Play Area (Course of David Black		10	0	33,000.00	8	33,000,0
14	New K-2 Play Area (Equipment/Paved Play)		LO	3	110,000,00	3	110,000,0
10.	New 3-5 Play Area (EquipmentiPlayed Play)		LO	3	110,000.00	0	110,000.0
10	New Art Pago		La	3	15,000.00	0	15,000.0
11.	New Multipurpose Freid-Walking Track	-	La	3	20,000.00	3	20,0001
10	New Mobile Pad and hookups	1	LS	5	30,000.00	3	30,000 1
19	Site Furniture	-	LS		10,000,00	5	10,000 (
- 20	Water Systems	1	LS	1.5	45,000.00	5	45,000 0
- 22	Sewer Systems	1	LS	S	30,000.00	S	30,000.0
23	Storm Drainage Systems	1	LS	\$	40,000.00	\$	40,000.0
24	General Erosion Control	1	LS	S	50,000.00	3	50,000 (
- 25	Underground Stormwater Management	1	LS	\$	150,000.00	\$	150,000.0
26	General Site Landscaping/Seeding	1	LS	\$	40,000.00	\$	40,000.0
27.				_			
28							
29							
30							
31							
32							
33							
34							
35	Off site road improvements: Restriping/Signage Only		LS	s	25,000.00	\$	25,000
36							
39							
40							
41							
42							
43		1					
44							
45							
46							
	* subject to review by owner and geotech				- Antonio - Contra		
	Contrigency	10	16	5	140,080.00	5	140,100.0
	TOTAL			1	and the first of a descent of a descent	\$	1 540 90

SCHEME B COSTS





<sup>\$13,200,190</sup> 

SCHEME B					
GROUND FLOOR	AREA	UN	IT COSTS	T	DTAL COSTS
DEMOLITION					
<ul> <li>SERVICE YARD</li> </ul>	535 SF	\$	5.00	\$	2,675
COOLER / FREEZER	380 SF	\$	5.00	\$	1,900
RENOVATION					
<ul> <li>EXISTING CAFETERIA</li> </ul>	5,430 SF	\$	112.00	\$	608,160
<ul> <li>CLASSROOMS INTO ADMIN SPACE</li> </ul>	2,605 SF	\$	112.00	\$	291,760
<ul> <li>ART ROOM INTO KINDERGARTEN TOILET CLASS</li> </ul>	1,295 SF	\$	112.00	\$	145,040
<ul> <li>REMAINDER 1998 BUILDING (SPRINKLERS, CLGS)</li> </ul>	12,630 SF	\$	10.50	\$	132,615
NEW CONSTRUCTION					
<ul> <li>FOOD SERVICE, PLANT OPERATIONS</li> </ul>	2,600 SF	\$	175.00	\$	455,000
SERVICE YARD	3,400 SF	\$	60.00	\$	204,000
MAIN FLOOR					
RENOVATION	21 275 CE	¢	112.00	¢	3 502 800
1955 – KENUVATE EXISTING CLASSRUUMS	6 664 SE	ф Ф	112.00	ф Ф	746 368
PE AKEA - KENOVATE	6,004 JF	¢ ¢	100.00	\$	609 700
	2 615 SE	¢	112.00	\$	292 880
<ul> <li>REMAINDER 1998 – (SPRINKLERS, CLGS)</li> </ul>	9,304 SF	\$	10.50	\$	97,692
CLASSROOM AREA (EAST END)	12,670 SF	\$	175.00	\$	2,217,250
SECOND FLOOR					
NEW CONSTRUCTION					
CLASSROOM AREA (EAST END)	12,670 SF	\$	175.00	\$	2,217,250
TOTAL BUILDING ONLY COSTS				\$	1,525,090
SITE				¢	150.000
PARENT, BUS LOOP CANOPIES	1 400 55	¢	55.00	¢	77,000
PREMANUFACTURED CANOPY	1,400 SF	Ð	55.00	¢	1 362 100
	(1777) 1723			Ф Ф	85 000
BUS LOUP 1	-50			4	05,000
TOTAL COSTS SCHEME B				\$1	13,200,190

#### SCHEME B SITE COSTS BREAKDOWN



OPIN	DPINION OF PROBABLE CONSTRUCTION CO SITE WORK		ATE 4/28/08 (REV 5/14/08)				
PROJE	ECT NAME		PRO	UECT	T NO	11.1	201
Conn	Elementary School	CON	07-1	63	0.00000	1h -	1.1.2
LOCA	DON	SUN	BY			1	
Raleic	h. NC		CLH	ě –			11
Item	Description	Quantity	Unit	(i)	Unit Price	-	Total Cost
	Site Bars						
	SCHEME B		141	1.4	52 555 65		40 100 00
	Mobilization & Staking	3	70	3	36,090.00	5	36,100.00
- 3	P. March 199 Providence in the second			-	15 000 00		15 000 00
4	Building Additions: Demo, earthwork, sidewalks	23	LS.	5	45,000.00	3	45,000.00
5	Courtyards: Demo, earthwork, pvmt, landscape	1	LS	\$	25.000.00	\$	25,000.00
6.	New parking lot	1	LS	5	150 000 00	\$	150,000.00
7.	Ex. Parking, car loop reconfiguration	1	LS	5	25 000 00	s	25,000.00
8	New Service Court	1	LS	S	10.000.00	\$	10,000.00
10	New Fire Lane	1	LS	\$	80.000.00	5	80,000,00
12	New Fire Lane Retaining Walls	1	LS	5	40 000 00	8	40,000,00
13	New Pre-K Play Area	1	LS	8	35,000,00	\$	35,000,00
14	New K-2 Play Area (Equipment/Paved Play)	1	1.8	5	110 000 00	s.	110 000 00
15	New 3-5 Play Area (Equipment/Payed Play)	1	LS	5	110 000 00	5	110 000 00
16	New Art Pabo	1	LS	\$	15,000,00	\$	15,000,00
17	New Multicurpose FieldWalking Track	1	LS	5	35,000,00	s	35,000.00
18	New Mobile Pad and hockups	1	LS	5	25 000 00	\$	25,000.00
19	Site Furniture	1	LS	ŝ	10,000,00	\$	10.000.00
20	Water Systems	1	LS	s	40 000 00	s	40,000,00
22	Sewer Systems	1	1.5	5	20,000,00	s	20,000,00
23	Storm Drainage Systems	1	LS	8	30 000 00	5	30 000 00
24	General Erosion Control	1	1.5	5	50 000 00	\$	50 000 00
25	Underground Stormwater Management	1	1.8	10	\$150,000	5	150 000 00
26	General Site Landscaping/Seeding	1	LS	5	40 000 00	5	40,000,00
27	New Walk to Midwood Drive	1	LS	8	8 000 00	\$	8 000 00
28		-		1		-	
29			-	-		-	
30			-	-		-	
31		-		+		-	
32			-	+			
33				-			
34				-		-	
35	Off site road improvements. Restriping/Signage				an and a second		1.000 - 0.000
- 39	Only	1	LS	\$	25,000.00	\$	25,000.00
36				1	0.0000000	-	1000
39							
40							
.41							
42							
43							
44							
45.			-				
48							
	* subject to review by owner and geotech						
	Contingency	10	16	5	123,910.00	\$	124,000.00
	TOTAL			-		s	1,363 100

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SCHEME C-





<sup>\$16,885,170</sup> 

GROUND FLOOR	AREA	UNIT COSTS	TOTAL COSTS
DEMOLITION SERVICE YARD COOLER / FREEZER 1955 GROUND FLOOR AREA	535 SF 380 SF 7,277 SF	\$ 5.00 \$ 5.00 \$ 5.00	\$ 2,675 \$ 1,900 \$ 36,385
RENOVATION <ul> <li>1998 BUILDING CLASSROOMS INTO NEW ADMIN</li> <li>ART ROOM INTO KINDERGARTEN TOILET CLASS</li> <li>REMAINDER 1998 BUILDING (SPRINKLERS, CLGS)</li> </ul> NEW CONSTRUCTION <ul> <li>FIRST GRADE POD</li> </ul>	2,542 SF 1,295 SF 12,353 SF 9,858 SF	\$ 112.00 \$ 112.00 \$ 10.50 \$ 175.00	<ul> <li>\$ 284,704</li> <li>\$ 145,040</li> <li>\$ 129,706</li> <li>\$ 1,725,150</li> </ul>
MAIN FLOOR			
DEMOLITION • 1955 BUILDING	37,785 SF	\$ 5.00	\$ 188,925
RENOVATION MEDIA CENTER 1998 BUILDING – ADMIN TO SSS SPACE REMAINDER 1998 – (SPRINKLERS, CLGS)	6,024 SF 2,537 SF 9,073 SF	\$ 100.00 \$ 112.00 \$ 10.50	\$ 602,400 \$ 284,144 \$ 95,266
NEW CONSTRUCTION <ul> <li>HIGH BAY CORE AREAS</li> <li>CLASSROOM AREA (EAST END)</li> <li>SERVICE YARD</li> </ul>	26,795 SF 18,607 SF 3,400 SF	\$ 175.00 \$ 175.00 \$ 60.00	\$ 4,689,125 \$ 3,256,225 \$ 204,000
SECOND FLOOR NEW CONSTRUCTION • CLASSROOM AREA (EAST END)	18,607 SF	<b>\$</b> 175.00	\$ 3,256,225
TOTAL BUILDING ONLY COSTS			\$ 14,901,870
SITE PARENT, BUS LOOP CANOPIES PREMANUFACTURED CANOPY SITE BUS LOOP "1"	 1,400 SF  	\$ 55.00  	\$ 150,000 \$ 77,000 \$ 1,671,300 \$ 85,000
TOTAL COSTS SCHEME C			\$ 16,885,170

#### SCHEME C SITE COSTS BREAKDOWN



PROJE Conn LOCA	TE WORK 4/28/08 (REV 5/14/08) DJECT NAME PROJECT NO ON COST 0ATE 4/28/08 (REV 5/14/08) PROJECT NO ON O				-24		
Item	Description	Quantity/	Unit		Unit Price	1	Total Cost
	Site Work						
-	SCHEME C		141		44 350 00		44 300.00
1.	wobitzation & Staking		78	3	44,230.00	3	44,300.00
3.	Building Addition Flame and under addition		10		205 000 00	e	205 000 0/
- 4. E	Stand Dampalaidevalt to play area	+	18	-	80,000,00	9 0	80,000,0
0. 6	New earlies let		10	6	155,000,00	0	155,000,00
2	Interwipersong lot	1	LO	3	155,000,00	e	20,000,0
- F.	Ex. Parking, car loop reconfiguration		La	2	20,000.00	e	20,000.0
+0	New First and	-	10	10	25,000.00	0	25,000 0
10	reew rie Lane		10	3	60,000.00	4	00,000,0
12	New Fire Lane Ketaining Walls	+	LO	2	35,000,00	3	35,000,00
13	New Pre-K Play Area	-	LO	3	35,000.00	2	35,000.0
14	New K-2 Play Area (Equipment/Paved Play)	-	La	3	110,000.00	3	110,000.00
10.	New 3-5 Play Area (Equipment/Paved Play)		1.0	-	110,000,00	0	110,000.00
10	New Million Factor		10	3	15,000.00	0	15,000.0
11,	New Multipurpose Field Walking Track		LO	3	25,000.00	3	25,000.0
10	New Mobile Pad and hookups	+	La	3	20,000.00	3	20,000.0
18	Jole Furniture		10	-	10,000.00	3	10,000.0
20	water systems		La	3	65,000,00	0	45,000.0
22	Onwer Oysomitis	-	LO	3	45,000.00	0	45,000.0
23	Storm Uranage Systems		10	3	45,000.00	0	45,000.0
29.	General Erosion Control		LO	3	65,000.00	3	150,000.0
- 20	Underground stormwater Management	-	La	3	150,000,00	3	150,000.0
20.	General Site Landscaping/Seeding	1	1.5	2	40.000.00	2	40,000.0
21.		-	-	-		-	
28			-	-		-	
29		-	-	-		-	
30		-	-	-		-	
31.			-	-		-	
32		-	-	-		-	
35		-	-	-		-	
34	Off site road improvements: Restriping/Signage						2.000 (S-5.00)
	Only	1	18	\$	25,000.00	\$	25,000.0
36		-		-	in the Sound Surger		51516552.01/1
39			_	-		-	
40		-				-	
41.		-	_	-		_	
42			_	-		-	
43.		_		-			
44		-	_	-		-	
45		-	_	-		-	
46			-	-		-	
	subject to review by owner and geolech			1			
-	Contingency	10	*	\$	151,930.00	\$	152,000.00
	TOTAL			1		\$	1,671,300

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#### TO

\$16,112,491

•	1998 BUILDING CLASSROOMS INTO NEW ADMIN	2,531 SF	\$	112.00	\$	283,472
•	ART ROOM INTO KINDERGARTEN TOILET CLASS	1,295 SF	\$	112.00	\$	145,040
٠	REMAINDER 1998 BUILDING (SPRINKLERS, CLGS)	12,713 SF	\$	10.50	\$	133,486
NEW CO	NSTRUCTION					
	FIRST GRADE POD	9,233 SF	\$	175.00	\$	1,615,775
MAIN FL	OOR					
DEMOLIT	FION					
۰	1955 BUILDING NORTH & WEST WINGS ONLY	19,960 SF		\$ 5.00	\$	99,800
RENOVA	TION		17.447			
•	MEDIA CENTER	6,097 SF	\$	100.00	\$	609,700
۰	1955 RE-PURPOSE CLASSROOMS EAST WING	11,608 SF	\$	117.00	\$	1,358,136
•	1955 PE AREA	6,664 SF	\$	112.00	\$	746,368
•	1998 BUILDING - ADMIN TO SSS & CR SPACE	2,568 SF	\$	112.00	\$	287,616
•	REMAINDER 1998 – (SPRINKLERS, CLGS)	9,256 SF	\$	10.50	\$	97,188
NEW COM	NSTRUCTION				State 2	
	HIGH BAY CORE AREAS	16,704 SF	\$	175.00	\$	2,932,200
	CLASSROOM AREA (EAST END)	17,047 SF	\$	175.00	\$	2,983,225
۰	SERVICE YARD	3,400 SF	\$	60.00	\$	204,000
SECOND	FLOOR					
NEW COM	ISTRUCTION					
۰	CLASSROOM AREA (EAST END)	17,047 SF	\$	175.00	\$	2,983,225
TOTAL B	UILDING ONLY COSTS				\$	4,327,591
SITE						
	PARENT, BUS LOOP CANOPIES				\$	150,000
•	PREMANUFACTURED CANOPY	1,400 SF	\$	55.00	\$	77,000
•	SITE				\$	1,569,300
۰	BUS LOOP "1"				\$	85,000
TOTAL C	OSTS SCHEME D				\$	6,112,491

AREA

535 SF

380 SF

7.277 SF

UNIT COSTS

\$

\$

\$

5.00

5.00

5.00

TOTAL COSTS

\$

\$

\$

2,675

1,900

36,385





SCHEME D

GROUND FLOOR

SERVICE YARD

COOLER / FREEZER

1955 GROUND FLOOR AREA

DEMOLITION

•

.

•

RENOVATION

#### SCHEME D SITE COSTS BREAKDOWN



OPIN	INION OF PROBABLE CONSTRUCTION COST TE WORK		DATI 4/28	E /08 (	REV 5/14/08)		1.1
PRO.IE	ECT NAME:	1	PRO	JECT	NO	11	-211
Conn	Elementary School	SDM	07-1	63			1 1 2
LOCA	TION	SUN	BY				
Raleig	ph, NC		CLH	l			· · · ·
ltem.	Description	Quantity/	Unit		Unit Price		Total Cost
	200.000	and the second					
	SCHEME D		141	-			
1.	Mobilization & Staking	3	5	5	39,000.00	5	39,000.00
3.	Building Additions: Damo, onthands sidewalks		10	-	120 000 00	e	120,000,00
	building Houcons, Demo, earthwork, souwarks		-0	1.	120,000.00		120,000.00
5	Courtyard Demo, earthwork, pvmt, landscape	1	LS	\$	30,000.00	\$	30,000.00
6	New parking lot	1	LS.	\$	155,000.00	\$	155,000.00
7.	Ex. Parking, car loop reconfiguration	1	LS	5	30,000.00	\$	30,000.00
8,	New Service Court	1	LS	\$	25,000.00	\$	25,000.00
10	New Fire Lane	1	LS	\$	80,000.00	\$	80,000.00
12	New Fire Lane Retaining Walls	1	LS	\$	30,000.00	\$	30,000.00
13	New Pre-K Play Area	1	LS	\$	35,000.00	\$	35,000.00
14	New K-2 Play Area (Equipment/Paved Play)	1	LS	\$	110,000.00	\$	110,000.00
15.	New 3-5 Play Area (Equipment/Paved Play)	1	LS	\$	110,000.00	\$	110,000,00
16.	New Art Patio	1	LS	\$	15.000.00	\$	15,000.00
17.	New Multipurpose Field/Walking Track	1	LS	5	20,000.00	\$	20,000.00
18	New Mobile Pad and hockups	1	LS	\$	30,000.00	S.	30,000.00
19	Site Furniture	1	LS	\$	10,000.00	\$	10,000.00
20	Water Systems	1	LS	- 5	45,000.00	\$	45,000.00
22	Sewer Systems	1	LS	5	30,000.00	\$	30,000.00
23	Storm Drainage Systems	1	LS	\$	35,000.00	\$	35,000.00
24.	General Erosion Control	1	LS	\$	50,000.00	\$	50,000.00
25.	Underground Stormwater Management	1	LS	5	150,000.00	\$	150,000.00
26	General Site Landscaping/Seeding	1	LS	5	40,000.00	\$	40,000.00
27.				-			
28							
29							
30							
31.				1			
32							
33							
34							
35.	Off site road improvements: Restriping/Signage Only	1	LS	\$	25,000.00	\$	25,000.00
36		-	1			1.175	
39							
40							
41							
42		- 11		_		-	
43							
44		_		-			
45.		_	-				
46		_	-	-		-	
	<ul> <li>subject to review by owner and geotech</li> </ul>						
	Contingency	10	56	\$	133,900.00	\$	133,900.00
	τοται					¢	1 472 000

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# SCHEME E COSTS





# \$18,678,549

GROUND FLOOR	AREA	UN	IIT COSTS	T	DTAL COSTS
DEMOLITION			0.000		
<ul> <li>SERVICE YARD</li> </ul>	535 SF	\$	5.00	\$	2,675
<ul> <li>COOLER / FREEZER</li> </ul>	380 SF	\$	5.00	\$	1,900
<ul> <li>1955 GROUND FLOOR AREA</li> </ul>	7,277 SF	\$	5.00	\$	36,385
RENOVATION					
1998 BUILDING CLASSROOMS INTO NEW ADMIN	2,542 SF	\$	112.00	\$	284,704
<ul> <li>ART ROOM INTO KINDERGARTEN TOILET CLASS</li> </ul>	1,295 SF	\$	112.00	\$	145,040
<ul> <li>REMAINDER 1998 BUILDING (SPRINKLERS, CLGS)</li> </ul>	12,353 SF	\$	10.50	\$	129,706
NEW CONSTRUCTION					
FIRST GRADE POD	9,467 SF	\$	175.00	\$	1,656,725
GROUND FLOOR MECHANICAL AREA	5,050 SF	\$	150.00	\$	757,500
MAIN FLOOR					
DEMOLITION					
e 1955 BLILL DING	37.785 SF		\$ 5.00	\$	188.925
<ul> <li>1989 MEDIA CENTER</li> </ul>	6,097 SF		\$ 500	\$	30,485
RENOVATION					
1998 BUILDING - ADMIN TO SSS & CR SPACE	2.585 SF	\$	112.00	\$	289,520
<ul> <li>REMAINDER 1998 – (SPRINKLERS, CLGS)</li> </ul>	7,888 SF	\$	10.50	\$	82,824
NEW CONSTRUCTION					
HIGH BAY CORE AREAS	39.521 SF	\$	175.00	\$	6.916.175
CLASSROOM AREA (EAST END)	11,349 SF	\$	175.00	\$	1,986,075
SERVICE YARD	3,400 SF	\$	60.00	\$	204,000
SECOND ELOOR NEW CONSTRUCTION					
CLASSROOM AREA (EAST END)	11,349 SF	\$	175.00	\$	1,986,075
CLASSROOM AREA (EAST END)	11,349 SF	\$	175.00	\$	1,986,075
TOTAL BUILDING ONLY COSTS				\$ 1	6,684,249
CITE					
PARENT BUS LOOP CANOPIES				\$	150.000
PREMANUFACTURED CANOPY	1,600 SF	\$	55.00	\$	88,000
SITE				\$	1,648,600
BUS LOOP "1"	19 <u>13</u> -			\$	85,000
TOTAL COSTS SCHEME E				\$ 1	8,678,549

SCHEME E

#### SCHEME E SITE COSTS BREAKDOWN



OPIN	ION OF PROBABLE CONSTRUCTION C WORK	OF PROBABLE CONSTRUCTION COST DATE 4/28/08 (REV 5/14/08)		REV 5/14/08)	M.I		
PROJ	ECT NAME		PRO	JECT	NO	11	21.
Conn	Elementary School	COM	07-1	63		1.1	-112
LOCA	TION	SUN	BY			1	
Raleio	h, NC	a second second second	CLH				1.1
Item	Description	Quantity	Unit		Unit Price		Total Cost
	-See Work						
	SCHEME E	1.5				-	
1.	Mobilization & Staking	3	%	\$	44,250.00	\$	44,300.00
3.							
4	Building Addition: Demo, earthwork, sidewalks	1	LS	5	195,000.00	5	195,000.00
5.	Steps/Ramps/sidewalk to play area	1	LS	S	60,000.00	\$	60,000.00
6	New parking lot	1	LS	\$	155,000.00	\$	155,000.00
7.	Ex. Parking, car loop reconfiguration	1	LS	\$	30,000.00	\$	30,000.00
8	New Service Court	1	LS	S	25,000.00	\$	25,000.00
10	New Fire Lane	1	LS	\$	75,000.00	\$	75,000.00
12	New Fire Lane Retaining Walts	1	LS	S	40,000.00	\$	40,000.00
13.	New Pre-K Play Area	1	LS	S	35,000.00	\$	35,000.00
14	New K-2 Play Area (Equipment/Paved Play)	1	LS	\$	110,000.00	\$	110,000.00
15	New 3-5 Play Area (Equipment/Paved Play)	1	LS	\$	110,000.00	\$	110,000.00
16.	New Art Patio	1	LS	S	15,000.00	\$	15,000.00
17.	New Multipurpose Field/Walking Track	1	LS	\$	35,000.00	\$	35,000.00
18.	New Mobile Pad and hookups	1	LS.	\$	20,000.00	\$	20,000.00
19.	Site Furniture	1	LS	S	10,000.00	\$	10,000.00
20	Water Systems	1	LS.	\$	65,000.00	\$	65,000.00
22	Sewer Systems	1	LS	\$	45,000.00	\$	45,000.00
23.	Storm Drainage Systems	1	LS	S	45,000.00	\$	45,000.00
24	General Erosion Control	. 1	LS	\$	65,000.00	\$	65,000.00
25.	Underground Stormwater Management	1	LS	\$	150,000.00	\$	150,000.00
26.	General Site Landscaping/Seeding	1	LS	S	40,000.00	\$	40,000.00
27.							
28.							
29.			-	-			5
30.							
31.							
32							
33.							
34.							
35	Off site road improvements: Restriping/Signage Only	1	LS	s	25,000.00	s	25,000.00
36.							
39							
40.							
41.							
42.							
43		11					
44.							
45.							
46							
Constraints	* subject to review by owner and geotech						
	Contingency	10	.94	\$	151,930.00	\$	152,000.00
	TOTAL					S	1.671.300
	FEATAL PATH			-			141 11444

#### **BUS LOOP SCHEMES**



OPIN SITE PROJE Conn LOCA Raleig	ION OF PROBABLE CO WORK ECT NAME Elementary School NON IN, NC		DAPOBC	ATE 28/08 ROJE 7-163 Y	CT NO		科
Item	Descript	tion Quantity	ı/U	nit	Unit Price	1	otal Cost
	Bus Loop Options						
1	Dus coop opuons		1	-		-	
3.			t				
4.	Option 1	3	1 1.2	5 1	\$ 85,000.00	\$	85,000.00
5							
6				_			
7.	Option 2		1 L:	5 I	\$ 25,000.00	\$	25,000.00
8			+	-		-	
10			+	-		-	
12			+	-		-	
14			+	-		-	
15			+	-		-	
16			+	-			
17			-				
1							
_							



• DPI ANALYSIS

#### **DPI COST ANALYSIS**

#### COSTS / STUDENT / YEAR

	RENOVATION	15% ADVANTAGE	NEW	
1955	\$6.93	\$5.89	\$4.66	LESS
1989	\$5.19	\$4.41	\$4.66	MORE
1997	\$2.59	\$2.20	\$4.66	MORE

|--|

Feasibility Score: 9 Site Feasibility Score: 11

Renovation Cost:\$ 5,416,913SF/yr Cost for Renovated Bldg:\$ 6.93

Replacement Cost:\$ 8,034,250SF/yr Cost for Replacement Bldg:\$ 4.66

#### **1989 MEDIA CENTER**

Feasibility Score: 16 Site Feasibility Score: --

Renovation Cost:\$ 609,700SF/yr Cost for Renovated Bldg:\$ 5.19Replacement Cost:\$ 1,481,550SF/yr Cost for Replacement Bldg:\$ 4.66

<u>1997 BUILDING</u>

Feasibility Score: 23 Site Feasibility Score: --

Renovation Cost:	\$1,	052	2,401
SF/yr Cost for Renovated	Bldg:	\$	2.59

Replacement Cost:\$ 4,145,225SF/yr Cost for Replacement Bldg:\$ 4.66

# EMMA CONN ACTIVE LEARNING AND TECHNOLOGY MAGNET ELEMENTARY

SUPER DESIGN NARRATIVE

WAKE COUNTY PUBLIC SCHOOLS 1515 ROCK QUARRY ROAD RALEIGH, NC 27610

PEARCE BRINKLEY CEASE + LEE, PA 333 FAYETTEVILLE STREET, SUITE 1000 RALEIGH, NC 27601

CLH DESIGN, PA 125 EDINBURGH DRICE SOUTH, SUITE 310 CARY, NC 27511

THE WOOTEN COMPANY 120 NORTH BOYLAN AVENUE RALEIGH, NC 27603

