

**Feasibility Study  
for  
George Watts Elementary School**

**May 26, 1992**

# Key Issues for Feasibility Study:

- Can renovations to Watts Street School be accomplished in a fashion that makes educational sense?
- Would a renovated Watts Street School be a safe environment for our children?
- What are the estimated renovation costs?
- Are these cost estimates reasonable?

# Issue 1:

**Can renovations to Watts Street School be accomplished in a fashion that makes educational sense?**

# Analysis:

- Propose renovations to Watts Street School that meet the educational guidelines of the BEP
- Examine 2 alternatives:
  - A. Retain size of current student population
  - B. Expand size of student population to 430

# Alternative A: Renovate School for Current Student Population (About 292 Students)

Grade Level	Students/Class	Classrooms	Total Students
K	23	2	46
1	23	2	46
2	23	2	46
3	23	2	46
4	26	2	52
5	26	2	52
EC	4	1	4
Total		12	292

# Alternative A: Summary of First Floor Plan

Total First Floor Area	21,287 FT <sup>2</sup>
Total Renovated Area	11,205
Total New Area	10,082
Music Room	1,288
Art Room	1,288
Media Center	1,450
Science Room	1,207
Computer Room	1,207
Kitchen	1,440
Cafeteria	1,220
Gymnasium	4,384
Storage	969
Toilet Rooms	720
Circulation	6,114

# Alternative A: Summary of Second Floor Plan

Total Second Floor Area	11,490 FT <sup>2</sup>
Total Renovated Area	11,205
Total New Area	285
2 K Classrooms	2,340
2 1st Grade Classrooms	2,265
1 2nd Grade Classroom	1,130
Administration	864
Teacher's Lounge	450
Storage	132
Toilet Rooms	374
Circulation	3,935

# Alternative A:

## Summary of Third Floor Plan

Total Third Floor Area	11,490 FT <sup>2</sup>
Total Renovated Area	11,205
Total New Area	285
1 2nd Grade Classroom	1,130
2 3rd Grade Classrooms	2,265
2 4th Grade Classrooms	1,630
2 5th Grade Classrooms	1,630
Exceptional Children	444
Special Teaching	280
Toilet Rooms	374
Circulation	3,737



# Alternative B: Renovate School for Expanded Student Population (About 437 Students)

Grade Level	Students/Class	Classrooms	Total Students
K	23	3	69
1	23	3	69
2	23	3	69
3	23	3	69
4	26	3	78
5	26	3	78
EC	5	1	5
Total		18	437

# Alternative B: Summary of First Floor Plan

Total First Floor Area	23,485 FT <sup>2</sup>
Total Renovated Area	11,205
Total New Area	12,280
3 K Classrooms	3,600
Media Center	1,810
Science Room	1,207
Computer Room	1,207
Kitchen	1,500
Cafeteria	1,810
Gymnasium	4,384
Storage	969
Toilet Rooms	660
Circulation	6,338

# Alternative B: Summary of Second Floor Plan

Total Second Floor Area	20,850 FT <sup>2</sup>
Total Renovated Area	11,205
Total New Area	9,645
3 1st Grade Classrooms	3,600
3 2nd Grade Classrooms	3,340
2 3rd Grade Classrooms	2,005
Media Center Support	1,057
Art Room	1,200
Music Room	1,256
Administration	1,036
Teacher's Lounge	460
Special Teaching	300
Toilet Rooms	450
Circulation	6,146

# Alternative B: Summary of Third Floor Plan

Total Third Floor Area	11,525 FT <sup>2</sup>
Total Renovated Area	11,205
Total New Area	320
1 3rd Grade Classrooms	1,000
3 4th Grade Classrooms	2,820
3 5th Grade Classrooms	2,445
Exceptional Children	552
Special Teaching	580
Toilet Rooms	660
Circulation	3,468

## **Issue 2:**

**Would a Renovated Watts Street School  
Be a Safe Environment for Our Children?**

# Analysis:

- Five elements of our school environment are vital for ensuring the safety of our children:
  1. structural soundness
  2. fire resistance
  3. access to exits in an emergency
  4. potential for smoke abatement
  5. playground safety

# Structural Soundness

- Law Engineering analysis documents the structural soundness of the school
- Report acknowledges the strength and durability of the building's concrete structure
- Small area of wooden roof supports can be replaced with steel roof easily and cost-effectively

# Fire Resistance

- School's concrete structure will not support combustion
- Renovations to small wooden roof section and interior partitions will ensure that these components will not support combustion
- Renovations can add 1-hour fire resistance to sheetrock in halls and 2-hour resistance to sheetrock near stair wells
- Thus, after renovation, only the building's contents (eg., furniture) will support combustion



# Access to Exits

- Addition of two stair towers will ensure effective and rapid exit in case of emergencies such as fire from all floors
- Addition of one external elevator shaft and elevator for disabled will ensure exit for all emergencies except building fires (this is not likely, since, after renovation, building will not support combustion)
- Students on first and second floors have access to additional exits as well

# Smoke Abatement

- After renovation, building will not support combustion
- However, in case of fire, elevators and stair wells can be equipped with fans to provide positive pressure and keep smoke out of exits
- This approach provides more protection than required by applicable state standards

# Playground Safety

- Proposed renovations will have minimal impact on current playground location, access, and layout
- Thus, playground safety will not be affected by the renovation
- The renovation may provide an opportunity to upgrade playground design and equipment, thus increasing the usefulness of this area

## **Issue 3:**

**What Are the Estimated Costs of Renovation?**

# Analysis:

- **Develop cost estimates for each alternative based on costs of similar renovation and new construction project elements for elementary schools in RTP area**

# Estimated Costs for Alternative A: (About 292 Students)

Building Level	Removal	Renovation	New Addition
First Floor	1,513 FT <sup>2</sup>	11,205 FT <sup>2</sup>	10,082 FT <sup>2</sup>
Second Floor	-	11,205	285
Third Floor	-	11,205	285
Total Area	1,513 FT <sup>2</sup>	33,615 FT <sup>2</sup>	10,652 FT <sup>2</sup>

Cost Category	Cost Calculation	Cost Estimate
Renovation	\$50/FT <sup>2</sup> x 33,615 FT <sup>2</sup>	\$ 1,680,750
New Construction	\$66/FT <sup>2</sup> x 10,652 FT <sup>2</sup>	\$ 703,032
Soft Costs		\$ 166,865
Contingency		\$ 200,000
Total Cost		\$ 2,750,647

# Estimated Costs for Alternative B: (About 437 Students)

Building Level	Removal	Renovation	New Addition
First Floor	1,513 FT <sup>2</sup>	11,205 FT <sup>2</sup>	12,280 FT <sup>2</sup>
Second Floor	-	11,205	9,645
Third Floor	-	11,205	320
Total Area	1,513 FT <sup>2</sup>	33,615 FT <sup>2</sup>	22,245 FT <sup>2</sup>

Cost Category	Cost Calculation	Cost Estimate
Renovation	\$50/FT <sup>2</sup> x 33,615 FT <sup>2</sup>	\$ 1,680,750
New Construction	\$66/FT <sup>2</sup> x 22,245 FT <sup>2</sup>	\$ 1,468,170
Soft Costs		\$ 220,425
Contingency		\$ 200,000
Total Cost		\$ 3,569,345

## **Issue 4:**

**Are These Cost Estimates Reasonable?**



# Analysis:

- Compare cost estimates for Watts Street with the range of ACTUAL costs for new construction and renovation of elementary schools in the RTP area
- Use this comparison to validate (or raise questions about) the reasonableness of design cost estimates to renovate Watts Street

# ACTUAL Construction Costs for New Elementary Schools

Summary of New Elementary School Construction Costs<sup>1</sup>  
(Research Triangle Area, 1992 Dollars)

School	Total Cost	Total Area	Unit Cost
Little River	\$ 5,761,249	80,660 FT <sup>2</sup>	\$ 71.43/FT <sup>2</sup>
Oak Grove	\$ 5,403,742	81,660 FT <sup>2</sup>	\$ 66.17/FT <sup>2</sup>
Hillandale	\$ 5,644,953	85,890 FT <sup>2</sup>	\$ 65.72/FT <sup>2</sup>
Glenn	\$ 5,040,565	72,148 FT <sup>2</sup>	\$ 69.86/FT <sup>2</sup>
Hope Valley	\$ 5,467,429	85,890 FT <sup>2</sup>	\$ 63.66/FT <sup>2</sup>

# ACTUAL Construction Costs for New Elementary Schools

Summary of New Elementary School Construction Costs<sup>1</sup>  
(Wake County Area, 1990 Dollars)

School	Total Cost	Total Area	Unit Cost
Baucom	\$ 316,873	4,987 FT <sup>2</sup>	\$ 63.54/FT <sup>2</sup>
Brassfield	4,126,173	69,805	59.11
Brooks	297,899	4,546	65.53
Combs	313,149	4,762	65.76
Conn	465,690	8,894	52.36
Fox Road	4,298,591	69,805	61.58
Fuller	287,241	4,246	67.65
Green	303,104	4,852	62.47
Joyner	306,247	4,875	62.82
Lacy	283,165	4,246	66.69
Leadmine	4,410,279	69,805	63.18
Lynn Road	322,320	5,100	63.20
Millbrook	310,425	6,050	51.31
Penny Road	4,503,120	69,805	64.51
Poe	344,046	5,100	67.46
Rand Road	4,281,140	69,805	61.33
Vance	3,916,085	61,983	63.18

# ACTUAL Construction Costs to Renovate An Existing Elementary School

School	Total Cost	Total Area	Unit Cost
Wiley	\$ 2,518,827	47,382 FT <sup>2</sup>	\$ 53.16/FT <sup>2</sup>

# Notes:

<sup>1</sup>New school construction costs include items which are typically NOT present in renovations of existing school buildings: site preparation, grading, and the building foundation and shell. Thus, unit costs for renovation of existing school buildings would be expected to be 20% - 30% lower than the unit costs presented in the table.

# Notes:

<sup>1</sup> Interpreting existing school renovation costs requires consideration of the scope of the renovation project. In this instance, the renovations for Wiley Elementary School (downtown Raleigh) are very similar to the renovations that would be required in the Watts Street Elementary School.

Renovations to Wiley Elementary School include site landscaping, a new parking lot, sidewalks, complete renovations to the interior of the original 40,204 FT<sup>2</sup> school building, and the addition of a 7,178 FT<sup>2</sup> adjoining new school building. Renovations to the original building include removing interior walls to enlarge all classrooms, new plumbing and electrical systems, adding air conditioning, replacing exterior windows, replacing wall, ceiling, and floor coverings, adding an elevator and otherwise making the building completely handicapped accessible. The new building construction added two classrooms, a kitchen and cafeteria, a bathroom area, and a mechanical room.

# Conclusion:

- **Cost estimates for renovation of Watts Street Elementary School are within the range of recent actual costs for similar projects in the Durham - RTP - Wake County area**

# DURHAM CITY SCHOOLS

## Auxiliary Services Department

808 Bacon Street  
Durham, North Carolina 27703  
(919) 560-2360

**FROM:** Lynn H. Smith, Director of Auxiliary Services *LHS*  
**DATE:** May 22, 1992  
**SUBJECT:** George Watts Elementary School Committee Data Request

1. What are the available unencumbered funds for Capital Improvement Projects?

George Watts Elementary School	\$2,947,118
E. K. Powe Elementary School	\$4,075,795
Club Boulevard Elementary School	\$ 130,000
Durham High School	\$7,557,366
2. What is the cost of daily bus travel per child for the Durham City Schools?

Non-exceptional children	\$0.56/day/child	\$ 100.88/year
Exceptional children	\$9.79/day/child	\$1,763.04/year
(Basis: 180 days)		

LHS:dk1

cc: Dr. Joyce P. Edwards, Superintendent