## KIMBALL ELEMENTARY SCHOOL FEASIBILITY STUDY-EXCERPT



R. MCGHEE & ASSOCIATES



STRUCTURAL ENGINEERS SCHARF ASSOCIATES COST ESTIMATORS

ARCHITECTURE | INTERIOR DESIGN | HISTORIC PRESERVATION

REVISED CONCEPT PLAN SUBMISSION MARCH 16, 2016





## TABLE OF CONTENTS

- Executive Summary 1
  - Existing Plans 2
- Design Concept Plans and Diagrams 3

### EXECUTIVE SUMMARY 1

KIMBALL FEASIBILITY STUDY | CONCEPT SUBMISSION | R. MCGHEE & ASSOCIATES

### EXECUTIVE SUMMARY and DESIGN CONCEPT ANALYSIS 03-04-2016 **Kimball Elementary School**

The purpose of the Kimball Elementary School Feasibility Study is to determine if the existing building meets the requirements needed for school modernization per DCPS October 2015 Ed Spec guidelines and understand if there is excess space in the building that can be made or re-purposed. The result of the study will provide us alternative options and recommendations that would result in the following: cost versus benefit analysis of the different approaches and whether to keep or demolish existing or would it be appropriate to build a new building. Finally, the study aims to develop a preliminary opinion of probable project cost and schedule associated with the most feasible strategy for accommodating the proposed capacity increase.

Based on the field survey and assessment of the existing school facilities, R. McGhee & Associates and our team of consultants performed a non-destructive visual investigation of the current facility and met with members of the community, school officials, SIT, DGS, and DCPS to better understand the way the school operates and how we can address the current built form issues that affect functionality of the Kimball School. The information uncovered is by no means complete and further study by the subsequent design team will be required to:

- Verify specific feasibility study assumptions for community acceptance and possible implementation
- Verify how each recommendation provided meets the needs of the school in accordance with community, Ed Spec, and DGS program guidance

Four possible schemes are being considered. All of the studies address the need to upgrade general building systems, meet the requirements of Ed Spec, and the anticipated increase of the student population. The R. McGhee team studied multiple schemes and four were selected for further evaluation. This executive summary discusses schemes one through four, which utilize various combinations of partial new construction and partial rehabilitation of the existing buildings to achieve Ed Spec/DCPS goals for the site and school modernization.

Initial analysis indicates that the building may have a less significant surplus of area based on the DGS, DCPS standard of 150 sf per student than first stated. Assessment and analysis of the building and existing plans by RMc of the usable and unusable space, shows that the surplus area actually includes unusable and unexcavated space in the existing building configuration square footage count. The actual variance is as follows: the RFP guidance indicates the Kimball SF to be 83,400 SF; the actual SF based on RMc examination is 73,570 usable SF (183SF/student), still above the required 65, 571 SF (161/student) listed as the goal in the approved Kimball School Ed Spec programming.

### Background

Kimball Elementary School was constructed in different periods between 1942-1962 at 3375 Minnesota Ave. SE, Washington DC. The facility consists of predominantly 2 story brick buildings with flat roofs. The structure is mainly cast in place concrete columns, beams and slabs, and brick veneer exterior walls. Roof structures consist of built-up roof over concrete roof slab. The North building is considered to be a contributing structure and recommended to be eligible to be listed as a Landmark by the DC Historical Preservation Office. The overall building gross area is approximately 72,000 SF. The building is sited on approximately 83,800 SF or 1.91 acres, and the overall building condition is rated as poor to fair for the majority of the building systems. The most significant systems that are inadequate are the mechanical, heating and cooling, lighting, plumbing, limited accessibility to the building, no elevator, and inadequate plumbing fixtures. Several repairs and renovation projects have been completed at various times throughout its history. The building has no automatic fire protection or air conditioning systems.

The present educational curriculum supports Pre-K through 5<sup>th</sup> Grade. The school's capacity is expected to increase to 400 students. The most revealing aspect of this school is the four rectangular pods connected by a breezeway parallel to Minnesota Ave and corner of Ely Rd. The classrooms are spread throughout the four buildings. Pre-kindergarten occupies the North building lower floor, science room and 2<sup>nd</sup> grade occupies the second floor in the North building. Classrooms for 5<sup>th</sup> grade and a teacher lounge occupy the second floor of the middle building. The auditorium, cafeteria, kitchen, toilet and storage space occupy the East Middle building. 3<sup>rd</sup>, 4<sup>th</sup> graders, library, special education classroom and admin offices occupies the 1<sup>st</sup> & 2<sup>nd</sup> floor of the South building. There are presently 35 classrooms for 230 students. The proposed program includes updating the school to 21 Ed Spec recommended size classrooms plus STEM, Music, and Art Classrooms for 400 students.

### Feasibility Study Approach

The overall feasibility approach was investigative and evaluative. First, the R. McGhee team conducted a site observation tour with building facility staff and collected observable data. Included with this investigation were obtainable documents highlighting limited existing construction documents and zoning and hazardous environmental conditions documentation. Additionally, we used the DCPS Educational Specifications for assessing and comparing existing functional spaces with the proposed space requirements. From this assessment and comparison, we were able to identify both shortages and overages in net usable space. Each scheme includes a spreadsheet with proposed versus Ed Spec square footages.

Secondly, we created criteria to evaluate the pros and cons for each scheme. We developed four possible options, of which two were selected as the most responsive to the functional and budgetary considerations. During the evaluation, we discovered several plan constraints. First, the original plan was inherently inefficient due to multiple level changes between buildings, the existing core education spaces are below minimum standards for Ed Spec, and the general layout of space. There are also existing building structural constraints, such as column and bearing and non-bearing wall locations, that impact space usage. All schemes will involve relocation of existing non-bearing interior clay tile walls to achieve optimal spaces in existing buildings. Opportunities exist to promote higher performing spaces in the Kimball environment using the existing building and new additions; in such cases we indicate exceptions that differ from the educational specifications.

### **Evaluation Criteria and Outcomes**

All schemes include the following elements:

- Core Academic spaces to comply with Ed Spec guidance
- Unassigned and support spaces at Kimball will remain inefficient in SF/student if existing buildings remain
- Each scheme includes increased daylighting by increasing window wall glazing and additional skylights
- Increase layout efficiency, ease of travel/circulation with more coherent Ed Spec compliant adjacencies ٠
- School staff seeks a building configuration that maintains and supports the family-friendly, student-friendly Kimball culture
- Installation of wayfinding and signage/color coding will help to define areas for users
- Installation of well-placed student commons/extended learning spaces throughout the school to promote collaboration and innovative teaching strategies and provide for teaching flexibility
- All schemes would need additional space to provide accessible vertical circulation due to the inefficient existing plan layout
- Each scheme would undergo replacement and upgrades of all major systems, including utilities, mechanical, electrical, plumbing, and AV/IT
- Maximizing usable interior and exterior open play spaces
- Organization of grade levels into clusters, readily accessible to centralized media, computer lab, science, and art
- Central secure access to the school with direct access to vertical circulation
- The Landmark-eligible North building is retained in all schemes
- Options A and B utilize both one-way and two-way vehicular traffic to access the site; Options C and D utilize • one-way vehicular traffic with access from Ely Place

### **Design Strategies**

All proposed design strategies presented modernize the existing building, ensure that it functionally meets or exceeds the proposed educational program, and ensure that the facility is safe, aesthetically pleasing, and energy efficient.

The feasibility study essentially focuses on creating separate grade level clusters that contain modernized and compartmentalized classrooms with supporting resource spaces and teacher's support spaces. The layout centralizes or spotlights the media center, security, and vertical circulation efficiency. A major design goal is to admit more daylight and transparency into the building envelope. This will enhance the interiors and create a delightful, warm, and welcoming environment.

- Given the age and poor condition of the majority of the mechanical and electrical equipment, and the extent of interior space renovation proposed, the mechanical and electrical system will be replaced with a more energy efficient and modern system.
- Reconfiguring the boiler room space and adjacent mechanical and electrical room to be converted to storage spaces and maintenance room.

The non-bearing interior wall system will need modification to reconfigure the existing partition layout to accommodate the Ed Spec requirements for a larger and more compartmentalized classroom layout. Options 1 and 2 houses the front entry lobby and welcome center leading to the vertical access that connects all the buildings. Accessibility of all the connected space is paramount goal in the rehabilitation of the Kimball School.

### **Educational Specification Compliance and Exceptions**

During the course of the feasibility study, which included a test fit of proposed programmed space with existing available area, we discovered variances, both overages and shortages. In those situations where shortages were due to existing square footages or if spaces required reconfiguring and resulted in creating a perceived programmatic disconnect, we requested exceptions in lieu of full compliance. Additionally, and where applicable, we complied with ensuring rooms were within the 15% tolerance of Ed Spec required square footage. The list below identifies various potential exceptions to the Ed Spec requirements.

- 1. Provide a larger kitchen by expanding into the existing storage space that is adjacent to the kitchen
- 2. Provide additional and/or flexible classroom spaces for future expansion
- 3. Provide additional collaboration spaces throughout to promote innovative teaching strategies and flexible pedagogies
- 4. Assume using the existing Dining, enlarge the existing kitchen area and provide full cooking equipment as opposed to a warming kitchen
- 5. Provide an elementary school compliant gymnasium to accommodate basketball, volleyball, restrooms, locker room and storage. Collapsible bleachers will also be provided
- 6. Provide a welcome center, identifiable main entrance, central administration area, larger library or media center
- 7. Provide space to accommodate present or future academic partners and parent resources

### Site Reconfiguration:

Each scheme assumes complete MEP and HVAC upgrades or complete system replacement where warranted. Option 1 uses a different site strategy than Option 2. Option 1 locates parking at the front entrance near Ely Place and installs a new lot and driveway to achieve a greater amount of play space adjacent to the school. Option 2 pushes the parking to the exterior of the site, removing parking from the interior drive and adding a new parking lot at the southernmost section of the site all on DCPS land. The interior drive is extended through the site at the perimeter and connects parking and site access with one-way traffic to Minnesota Ave via an additional curb cut. Each parking design will require 9 x 19 foot spaces with proper locations for handicap parking spaces. Current staffing projections will require approximately .667 spaces per 72 staff which equals approximately 48 spaces, grandfathering deductions notwithstanding. Note: August 2016 approved changes to the DC Zoning Code reduce the required spaces to 25% of the staff total which should relieve some pressure to install additional spaces to meet code.

Citing community, teacher, and staff comments indicating the lack of outdoor play spaces and garden areas, each scheme endeavors to provide direct play adjacent to the buildings for PK and K and additional general play areas for the remainder of the student population.

All new entrances should be equipped with accessible entry devices either ramps or grade manipulation to allow prominent and visible ADA access to main school entry points. Grade changes and/or a retaining wall along Minnesota Avenue will be required to accommodate Option 1 where a 12-15 foot slope extends from the northern to southern part of the site.

Parents and staff cite the lack of programs and limited field usage by students or the neighborhood based on the current configuration focusing on primarily baseball.

### Option 1

Option 1 proposes to efficiently reuse the existing building in its entirety. The north building remains the least reconfigured due to its landmark eligible status. The three non-contributing buildings and connectors are reskinned with glazing in select places to allow for more light infused interior spaces. Spaces are completely reorganized and relocated per Ed Spec guidance. Option B proposes deftly located additions to provide more useful connective tissue between the existing pods.

Both options focus on academic clustering, which is generally the same in each. Little structural demolition is proposed in either. The north building houses intermediate and primary, the south building houses Pre-K, K, and core support spaces, and the middle wing houses media center, administration, science, art, and music classes, as well as the dining and gymnasium, in each option. The large difference between the two is creating more efficient circulation to the clusters by relocating the interior circulation from a middle corridor to the eastern edge of the building. The site locates parking to the perimeter so the play area is in the heart of the site in the middle and north end, adjacent to core early childhood learning spaces

The stage is relocated from the auditorium to the cafeteria to allow for proper gymnasium sizing. The media center is moved to a more prominent and central location facing Minnesota Avenue. A covered shelter is installed at the exterior play areas for morning gathering/staging as requested by staff.

### Option 2

Option 2 demolishes the middle and south buildings to achieve a more coordinated interplay between the core learning spaces, reduce travel time, and allow the desired clustering of grades and learning pedagogies. The north building is reconfigured, removing the interior faces of the classroom partitions to allow for a wider classroom configuration without completely changing the corridor walls and floors. Option 2 also installs a full size elementary school gymnasium (5,157SF) within the existing auditorium/cafeteria building with some additions to accommodate a stage and bleachers. The full service gymnasium can compensate for the dearth of structured play areas at the exterior and adjacent to the site. The former one story kitchen receives a second story to accommodate the full size (41 x 71 feet) basketball court and circulation area. The existing cafeteria, already oversized, is unchanged; however, a full service kitchen would be installed to meet Ed Spec requirements. The ground floor media center in Option 2 is located at a prominent and visible southern site location along Minnesota Avenue, signifying the Kimball School revitalization to the community. This location locates the media center in conjunction with art, STEM, and/or Music classrooms to form a "creative" cluster of academic resources for all students. The relocation of all parking to the perimeter of the site allows for an uninterrupted concentration of play areas at the rear courtyard. An outdoor playground protected by fencing is installed at the Ely Place entry corner creating a new age-appropriate morning gathering place for young and old visitors to the site.

Option  $\bar{2}$  also includes two additional classrooms for growth and two additional collaboration spaces to provide and enhance the extended learning potential at each cluster. The assigned space overage above Ed Spec includes the additional space allotted for a full gymnasium space (2,550SF), the existing cafeteria inherent overage (2,024SF), and two additional classrooms and two extra collaborations spaces totaling 2,400 SF for a total of 6,974 SF above the Ed Spec for assigned spaces.

## EXISTING PLANS 2

KIMBALL FEASIBILITY STUDY | CONCEPT SUBMISSION | R. MCGHEE & ASSOCIATES



Aerial View Looking East



Aerial view looking North



Aerial view looking West



Aerial view looking South

### Aerial Photos



### Lot Information and Boundary Not to Scale



### Existing Site Plan



Existing Basement Plan



Existing First Floor Plan





## DESIGN CONCEPT PLANS AND DIAGRAMS 3

KIMBALL FEASIBILITY STUDY | CONCEPT SUBMISSION | R. MCGHEE & ASSOCIATES



Washington, DC

02 04 2016



02 04 2016



02 04 2016





{···

0

0

000



## **R. McGHEE & ASSOCIATES**

ARCHITECT:

KIMBALL FEASIBILITY STUDY | CONCEPT SUBMISSION | R. McGHEE & ASSOCIATES



### **OPTION 1**

### **Kimball Feasibility Study** Washington, DC Issue Date



## **R. McGHEE & ASSOCIATES**

**ARCHITECT:** 

KIMBALL FEASIBILITY STUDY | CONCEPT SUBMISSION | R. McGHEE & ASSOCIATES

### **Kimball Feasibility Study** Issue Date





### **Kimball Feasibility Study** Washington, DC Issue Date









KIMBALL FEASIBILITY STUDY | CONCEPT SUBMISSION | R. McGHEE & ASSOCIATES

### **Kimball Feasibility Study** Washington, DC Issue Date







KIMBALL FEASIBILITY STUDY | CONCEPT SUBMISSION | R. McGHEE & ASSOCIATES



### **OPTION 1**

### Kimball Feasibility Study Washington, DC Issue Date Washington, DC





	ED SPEC vs	Proposed Area Option B		
Name	Propose Area	Ed spec required	difference	Tolerence
Admin	1,935	2275	-340	-15%
Extended Day	689	500	189	38%
1 GR	836	900	-64	-7%
1 GR	872	900	-28	-3%
2 GR	838	900	-62	-7%
2 GR	831	900	-69	-8%
3 GR	780	900	-120	-13%
3 GR	780	900	-120	-13%
4 GR	838	900	-62	-7%
4 GR	796	900	-104	-12%
5 GR	838	900	-62	-7%
5 GR	831	900	-69	-8%
Art	1,196	1200	-4	0%
Common	512	600	-88	-15%
Common	498	600	-102	-17%
Common	861	600	261	44%
Flex	847	900	-53	-6%
Kinder	1.186	1175	11	1%
Kinder	1,205	1175	30	3%
Kinder	1.219	1175	44	4%
evel Reading	842	900	-58	-6%
Music	1 223	1200	23	2%
Office	109	1200	-11	-9%
Office	178	120	58	48%
Parent Center	534	300	234	78%
	1 230	1175	55	5%
	1 149	1175	-26	-2%
	1 218	1175	43	2%
	1,210	1175	45	476
	1,217	1175	42	470
	2101	250	2	1%
Posourco	240	250	-2	-1/0
	240	250	10	/0/
Pasaursa	240	250	-10	-4%
Posourco	255	250	5 12	I/0
Special Needs	202	250	12	J /0
	1,554	1750	-410	-2470
	807 1.224	900	-33	-4%
Norkroom	1,224	1000	224 175	22%
	120	22U	1/5	32%
Zinning	3,740	2250	1,490	00%
Storago	2,039	1000	439	27%
Noch toilet Circulation Stal	1,014	450	504	125%
viech tollet Circulation Stal	22,196	1462/	7,569	52%
	128	100	28	28%
viedia	3,633	3750	-11/	-3%
Aud/Gym	3,991	4310	-319	-7%
Chair Stor	152	200	-48	-24%
PESTORAGE	144	150	-6	-4%
I otal Net	69,803	60602	9,201	15%
Construction Factor	6,997	4969	2,028	41%
Total Gross	76,800	65,571	11,229	17%

Area Types Option B				
Comments	Proposed Area	Ed spec required	Difference	Tolerence
Admin	2624	2775	-151	-5%
Core	30136	30550	-414	-1%
Dining/FoodService	5785	3800	1985	52%
Maint Custodial	1014	450	564	125%
Mech Toilets Circulate etc	22195	14627	7568	52%
Media Center	3762	3750	12	0%
PE Assembly	4287	4650	-363	-8%
Total Net	69803	60602	9201	15%
Construction Factor	6997	4969	2028	41%
Total Gross	76800	65571	11229	17%
Total SF/Student	191			







2 BASEMENT FLOOR BLOCKING PLAN 1/32" = 1'-0"



### **OPTION 2**

### Kimball Feasibility Study Washington, DC Issue Date



<sup>1) &</sup>lt;u>1ST FLOOR BLOCKING PLAN</u> 1/32" = 1'-0"



## **Kimball Feasibility Study**





Assigned Legend

- classroom
- PEAssembly
- Support
- unassigned

**GREEN ROOF** 

INSTRUCTIONAL COACH

WORKROOM

PARENT CENTER

LEVEL READING

## OPTION 2

### Kimball Feasibility Study Washington, DC Issue Date













### Kimball Feasibility Study Washington, DC Issue Date

## **OPTION 2 ELEVATIONS**







KIMBALL FEASIBILITY STUDY | CONCEPT SUBMISSION | R. McGHEE & ASSOCIATES

- Assigned Legend
- classroom
- unassigned





## **OPTION 2 SECTIONS**

### **Kimball Feasibility Study** Washington, DC Issue Date







# Kimball Feasibility Study Washington, DC Issue Date



KIMBALL FEASIBILITY STUDY | CONCEPT SUBMISSION | R. McGHEE & ASSOCIATES

ED SPEC vs Proposed Area Option C				
Name	Proposed Area	Ed Spec Required	Difference	Tolernace
ADMIN	2737	2775	-38	-1%
1GR	850	900	-50	-6%
1GR	864	900	-36	-4%
2GR	843	900	-57	-6%
2GR	870	900	-30	-3%
3GR	850	900	-50	-6%
3GR	850	900	-50	-6%
4GR	907	900	7	1%
4GR	850	900	-50	-6%
5GR	900	900	0	0%
5GR	900	900	0	0%
ART	1119	1150	-31	-3%
COMMONS	488	360	128	36%
COMMONS	747	750	-3	0%
COMMONS	456	360	96	27%
FLEX	916	900	16	2%
FLEX	900	430		
INSTRUCTIONAL COACH	201	200	1	1%
К	1010	1175	-165	-14%
К	1055	1175	-120	-10%
К	1024	1175	-151	-13%
LAPTOP	332	100	232	232%
LEVEL BOOK READING	700	700	0	0%
MUSIC	1119	1150	-31	-3%
OP/T / SPEECH	431	500	-69	-14%
PARENT CENTER	300	300	0	0%
PK	1010	1175	-165	-14%
PK	1046	1175	-129	-11%
PK	933	1175	-242	-21%
PK	1019	1175	-156	-13%
PK	1002	1175	-173	-15%
RESOURCE	313	250	63	25%
RESOURCE	315	250	65	26%
RESOURCE	294	250	44	18%
RESOURCE	268	250	18	7%
SPED	864	900	-36	-4%
SPED OFFICES (5)	750	750	0	0%
SPED RESOURCE1	317	250	67	27%
SPED RESOURCE2	315	250	65	26%
SPED/K	1018	900	118	13%
STEM	950	1000	-50	-5%
WORKROOM	221	200	21	11%
DINING	3911	2000	1911	96%
KITCHEN	2070	1800	270	15%
MEDIA CENTER	3636	3750	-114	-3%
CHAIR/TABLE STO	223	200	23	12%
PE ASSEMBLY	3742	3400	342	10%
PE STORAGE/OFFICE	250	250	0	0%
STAGE	764	800	-36	-5%
Custodial	450	450	0	0%
Mech Electrical Toilets Circulation etc	17205	14627	2578	18%
Total Net	65105	60602	4503	7%
Construction Factor	5339	4969	370	7%
Total Gross	70444	65571	4873	7%
Total SF/ Student	175			

Туре	Proposed Area	Ed Spec Required	Difference	Tolernace
Admin	2737	2775	-38	-1%
Core	30118	30550	-432	-1%
Custodial	450	450	0	0%
Dining/FoodService	5981	3800	2181	57%
Mech Toilets Circulate etc	17204	14627	2577	18%
Media Center	3636	3750	-114	-3%
PE Assembly	4979	4650	329	7%
Total Net	65105	60602	4503	7%
Construction Factor	5339	4969	369	7%
	70444	65571	4872	7%
Total SF/Student	175			

