

Design Cost Data™

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November-December 2013 \$17.00

The #1 Industry Source for Actual Square Foot Cost Data

***What to Expect in the New LEED v4
Materials and Resources Credits***

***The DCD LEED® & Sustainable
Square Foot Cost Guide***



**New Freeman Kennedy Elementary School
Norfolk, Massachusetts
Architect: Flansburgh Architects**

Martin Luther King Jr. Senior High School

Detroit, Michigan

Architect

TMP Architecture, Inc.



The new Martin Luther King Jr. Senior High School (MLK) was the first of seven initial projects in the Detroit Public Schools \$500 million bond program, funded in part with federal stimulus dollars. To qualify for the stimulus funding, the project was required to be designed, constructed and occupied within a three-year span of time.

The building project consists of a preserved and remodeled 1980 auditorium wing and a building addition replacing the original 1968 high school. Within the school, a tribute to Dr. King, the "Martin Luther King, Jr. Center," is used as a large group lecture venue and as an informal gathering space for students and visitors. The new building is divided into four smaller learning communities. The new 245,412 square foot school includes a cyber cafe, media center overlooking the MLK Center, a gymnasium with spectator seating for 1,200, an 8-lane competition pool and a community health center.

Going for Gold In March 2013, the project received LEED® Gold Certification from the United States Green Building Council. The school features a ground source geothermal heat pump heating and cooling system that serves all four main academic areas of the school. All south-facing classroom windows feature sun shades to reduce solar gain and to increase energy efficiency of the building by reducing the cooling load. General glazed areas included window shading and low-emissivity glass.

The decision to build the new facility on the 34-acre urban site of the original school afforded opportunities for community connectivity, accessibility to general services, and



Photos Courtesy of Granger Construction /TMP Architecture, Inc.

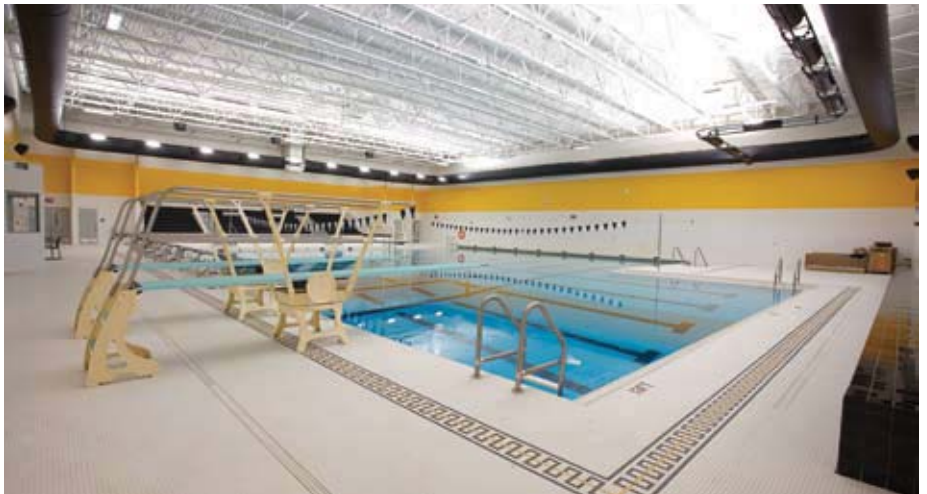
a walking distance to adjacent residential neighborhoods and public transportation.

The design-build team's strategy included utilizing as many regional materials as possible to aid in the reduction of pollution from the transport of materials. Material selection also included many low-VOC materials.

Energy-efficiency initiatives included controllability of lighting systems and water conservation initiatives included the installation of low-flow plumbing fixtures.

As with many urban sites, the MLK location was found to have soil contamination over a substantial percentage of its area, necessitating an extensive and costly remediation. This posed a challenge not only to the budget but also to the already compressed project schedule. Fortunately, the project team took on this apparent challenge and made it an earth-friendly opportunity, with brownfield redevelopment and remediation of the contaminated soils to residential standards.

The siting of the project required that the design team develop a solution for the building form and massing that would comfortably relate to a neighborhood of both residential scaled dwellings and old and new mid-rise buildings in proximity to the site. The new building is comprised of a 197,997 square foot addition and a 47,416 square foot remodeled wing. The addition is longer than it is wide. To prevent the school from becoming visually overpowering, the design team organized the addition block into modules, thus reducing the scale of the shape to a more compatible one with adjacent buildings.



LEED® Points Achieved	74 Total
Sustainable Sites	19
Water Efficiency	9
Energy & Atmosphere	24
Materials & Resources	6
Indoor Environmental Quality	10
Innovation in Design	6

LEED® GOLD

Extended Product Information
Sheating: Georgia Pacific
 See advertisement on page 23.

Product Information
Brick: Hanson Metal Panels: Versawall
Sheating: Georgia Pacific
Roofing: Firestone, Berridge Manufacturing
Windows: Lixex
Curtain Wall, Entrances & Storefront: Tubelite
Daylighting: Kalwall Gypsum: USG
VCT: Armstrong
Flooring: ECO Surfaces, Connor
Metal Framing: Dietrich
Elevators: Thyssen Krupp
Lighting: Lithonia, Finelite, SPI



Architect

TMP Architecture, Inc.
1191 W. Square Lake Road, Bloomfield Hills, MI 48302
www.tmp-architecture.com

Project Team

Consulting Architect:

SDG Associates, LLC
615 Griswold Street, #103, Detroit, MI 48226

Structural Engineer:

Desai/Nasr Consulting Engineers, Inc.
6765 Daly Road, West Bloomfield, MI 48322

General Contractor:

Jenkins Granger Alliance for Detroit Public Schools
985 E. Jefferson Avenue, #300, Detroit, MI 48207

Mechanical & Electrical Engineer:

FES Group, LLC
28036 Oakland Oaks Court, Wixom, MI 48393

Civil Engineer:

Spalding DeDecker Associates, Inc.
1435 Randolph St., #400, Detroit, MI 48226

Project General Description

Location: Detroit, Michigan

Date Bid: Apr 2010 **Construction Period:** June 2010 to Sep 2011

Total Square Feet: 245,412 **Site:** 23.8 acres.



Number of Buildings: One; High school with 56 classrooms, auditorium seating 1,191 fixed; gymnasium seating 1,181 with barrier free.

Building Sizes: First floor, 152,578; second floor, 90,545; third floor, 551; fourth floor, 1,738; total, 245,412 square feet.

Building Height: First floor, 14'; second floor, 16'; total, 68' (Floors 3 and 4 pertain to the balcony and mechanical level of the auditorium only, which reaches 68'. The overall majority of the building is a two-story building at 30', with the exceptions of the Gymnasium at 58' and Martin Luther King Center at 30').

Basic Construction Type: Addition/Renovation.

Foundation: Cast-in-place, pier & grade beam, reinforced concrete, slab-on-grade. **Exterior Walls:** Brick, curtain wall, metal panel. **Roof:** Built-up, metal. **Floors:** Concrete, rubber.

Interior Walls: CMU, metal stud drywall.

Projected and/or modeled energy usage KBTU/SF/yr: 20.40.

DIVISION	COST	% OF COST	SQ.FT. COST	SPECIFICATIONS
PROCUREMENT & CONTRACTING REQ.	482,820	1.19	1.97	—
GENERAL REQUIREMENTS	9,646,184	23.76	39.31	—
CONCRETE	1,724,934	4.25	7.03	Forming & accessories, reinforcing, cast-in-place, precast, grouting. (concrete breakdown: cubic yards foundation, 10,950; cubic yards floors, 4,050). Unit.
MASONRY	4,181,500	10.30	17.04	Structural metal framing, joists, decking, cold-formed metal framing, metal fabrications, decorative metal.
METALS	1,363,000	3.36	5.55	Rough carpentry, finish carpentry, architectural woodwork.
WOOD, PLASTICS & COMPOSITES	304,006	0.75	1.24	Dampproofing & waterproofing, thermal protection, weather barriers, roofing & siding panels, membrane roofing, flashing & sheet metal, roof & wall specialties & accessories, fire & smoke protection, joint protection.
THERMAL & MOISTURE PROTECTION	1,323,398	3.26	5.39	Doors & frames, specialty doors & frames, entrances, storefronts & curtain walls, windows, hardware, glazing, louvers & vents.
OPENINGS	2,516,259	6.20	10.25	Plaster & gypsum board, tiling, ceilings, flooring, wall finishes, acoustic treatment, painting & coating.
FINISHES	1,998,758	4.92	8.14	Information, interior, safety, storage, exterior.
SPECIALTIES	272,577	0.67	1.11	Vehicle & pedestrian, commercial, food service, educational & scientific, athletic & recreational, other.
EQUIPMENT	732,488	1.80	2.98	Art, casework, furnishing & accessories.
FURNISHINGS	3,233,727	7.96	13.18	Elevators (1 passenger).
CONVEYING SYSTEMS	136,400	0.34	0.56	Fire Suppression: Water-based fire-suppression systems. Plumbing: equipment, fixtures, pool & fountain systems, gas & vacuum systems for laboratory & healthcare. HVAC: piping & pumps, air distribution, central heating, central cooling, central HVAC equipment, decentralized HVAC equipment.
HVAC	7,595,500	18.71	30.95	Medium-voltage distribution, lighting. Communications: structured cabling, data, voice, audio-video. Safety & Security: access control & intrusion detection, detection & alarm.
ELECTRICAL	5,091,900	12.53	20.75	Assessment, subsurface investigation, demolition & structure moving, site remediation, contaminated site material removal.
TOTAL BUILDING COSTS	40,603,451	100%	\$165.45	Site clearing, earth moving, shoring & underpinning.
EXISTING CONDITIONS	540,000			(Excluding architectural and engineering fees)
EARTHWORK	5,267,843			
TOTAL PROJECT COST	46,411,294			

UPDATED ESTIMATE TO DECEMBER 2013: \$180.92 PER SQUARE FOOT

Regional Cost Trends

This project, updated to December 2013 in the selected cities of the United States.

EASTERN U.S.	Sq.Ft. Cost	Total Cost	CENTRAL U.S.	Sq.Ft. Cost	Total Cost	WESTERN U.S.	Sq.Ft. Cost	Total Cost
Atlanta GA	\$138.70	\$34,039,226	Dallas TX	\$134.18	\$32,929,252	Los Angeles CA	\$179.41	\$44,028,999
Pittsburgh PA	\$174.89	\$42,919,962	Kansas City KS	\$180.92	\$44,398,991	Las Vegas NV	\$164.33	\$40,329,083
New York NY	\$223.13	\$54,758,756	Chicago IL	\$188.45	\$46,248,949	Seattle WA	\$179.41	\$44,028,999

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