Santa Monica High School Improvement Concept Plans
February 11, 2014

City of Santa Monica
Planning & Community Development
Office of Strategic & Transportation Planning
1685 Main Street, Room 212
Santa Monica, CA 90401

RE: Santa Monica High School Safe Routes to School

Dear Mayor, City Councilmembers and City Manager:

The Facility Improvement Projects Department of the Santa Monica-Malibu Unified School District would like to thank you and the City staff for all of your efforts in securing this Safe Routes to Schools grant. The District supports these efforts to continually improve the safety around our schools. We rely upon your efforts and skills on helping us make our routes to school safe and acceptable to the adjacent neighborhood communities. We understand these conditions are extremely complex and required the City’s consultants and planning staff, many site visits, meetings, and planning hours. We appreciated the team’s outreach efforts made throughout the process. We hope our parent community will increase their participation on any further outreach events.

We join our PTSA in supporting your focus and attention to our children’s safety, improving the traffic issues, and encouraging alternative methods of arriving to school. Understanding there are no “Silver Bullets” which will solve all the concerns we do appreciate the staff responding to questions and concerns our office has received. I have attached under separate cover a list of inquiries that I believe staff will address, as appropriate, in their presentation.

Respectfully,

Stuart A. Sam, Campus Architect
Director, Facility Improvement Projects
Santa Monica-Malibu Unified School District
2828 Fourth Street, Santa Monica CA 90405
Installation of new sidewalk & underground utilities (No Parking)

Service Yard

Grade/Asphalt Stripe

Parking

Contractor Laydown Area

New Transformer/Generator/Field House Building

Construction Access Ramp

Demolition of Technology Building

Summer 2014

Excavation

Summer 2014

Existing Science Building (2 Story)
PHASE 1A

Olympic Blvd
6th St
Michigan Ave
7th Crt
7th St

Construction
Fence
~12' - 0" width
for exiting
width
for exiting

Fall 2014

EXISTING SCIENCE BUILDING (2 STORY)

AVAILABLE PARKING

EXCAVATION ZONE

FIELD CONSTRUCTION ZONE

NEW INNOVATION BUILDING

Construction Access Ramp

Entry Gate

Construction Fence

New Transformer/Generator/Field House Building
Summary of Air Quality

**Background**
The District was authorized per the voter approved Measure BB in November 2007 to move forward in developing a facility improvement program to address the school housing needs of the community. The Board of Education (BOE) resolution included mandatory components such as sustainability. The BOE utilized the standards from the Collaborative High Performance Schools (CHPs) which is the counterpart to LEEDS, but specific to schools. Therefore, our school improvement program was designed to exceed 15% of the CHPs certificate standards. As a result, the design standards required our Architects to incorporate and address many sustainable issues including air quality. As a result of our coastal locale and good air quality, most of our designs incorporated a hybrid system requiring natural air ventilation and limited forced fan/passive solar greenhouse convection system for required air changes. Our spaces typically do not have mechanical air cooling. The District has two schools adjacent to the I-10 freeway, Santa Monica High School (9-12 grade) and Edison Language Academy (pre-K to 5th grade) Edison is the only entirely newly constructed school.

**Regulatory and Oversight**
The District is required to comply to the California Department of Education, (CDE) and Division of the State Architect, (DSA) as the primary regulatory agencies. Additionally the project is subject to CEQA requirements. The project conformed to those requirements during the entitlement process 2008-2010. The District has also elected to add to the oversight by creating an Advisory Committee in addition to the state required Prop 39 Bond Oversight Committee. The Measure BB Advisory Committee (BBAC) is comprised of 15 members representing the community of parents, residents and includes 2 Staff members of the City of Santa Monica, 1 staff member Santa Monica College, 1 staff Member City of Malibu, 3 architects and has 3 Board of Education Liaisons. This committee determines the budget allocation, scope and design objectives for all Measure BB Bond funds. Scopes for Measure BB projects have been determined and all funds are 100% allocated. Changes or additions to the scope require the review and approval by the BBAC and its 9 subcommittees which include Design Review, Sustainability, Budget, Technology, and Landscape to name a few. If a window is requested to be added to the scope the BBAC would review the merits and direct staff to issue the Change Order. If the additional scope is not an unforeseen obstruction, documentation conflict, or DSA code requirement then all additional scope shall be evaluated and presented to the BBAC for their recommendation to the Board of Education.
CEQA/EIR: Mitigated Negative Declaration 2009-10
The Mitigated Negative Declaration report addressed the issue, “Does this project expose sensitive receptors to substantial pollutant concentrations?” Based upon the Localized Significant Thresholds (LST) mythology promulgated by the SCAQMD the conclusions were “Less Than Significant Impacts”. Identified sensitive receptors to the LST and local to the area besides the existing Edison Language Academy site, included Les Infant Preschool, Public and Private Multi-Family Residential, Virginia Park play yards, fields, and community spaces, and Stewart Park, fields, and play yards.

California Department of Education (CDE)
CDE-Division of School Facilities Planning addresses schools near freeways: “New school sites cannot be located within 500ft of freeway. Existing school sites can continue to operate, renovate and expand. Samohi/Edison is within 500ft of the I-10. To help clarify concerns, telephone discussion occurred with Ian McMillian, Program Supervisor, Inter-Governmental Review Planning, Rule Development & Area Sources SCAQMD, ..”the I-10 in Santa Monica is much better, it is not raised or even level to the grade but a subterranean type Freeway (below grade), when I was at LAUSD, we established the 500ft after studies where evaluating proposed new inner city schools near raised freeways. To your advantage, the I-10 in Santa Monica also has limited truck travel as it changes into the Pacific Coast Highway with further transportation restrictions. Given this scenario, the freeway has much less impact on the SMMUSD schools. “

Edison Ventilation System
The ventilation is a complex system integrating solar chimneys which creates a convection flow of hot air drawing cool air through the actuated windows providing air changes and flow rates as prescribed by the thermostat and CO2 monitors. The forced fans will exhaust the entire spaces during non-schools hours typically 3am-7am. The fans were not designed to operate during school hours as their size and proximity would cause sound vibration and noise exceeding the 45db requirements in the classrooms. The forced fan units are integrated to provide only secondary ventilation but allow for filtration while they are in operation. The designed criteria and original specifications of the ventilation system allows for the installation of filter rated as MERV 9. MERV 9 was established as the bases of design by the Architects complying to recommendations provided by the CHPs requirements. Attached MERV rating chart.

District Wide Design Specifications
2010 prior to DSA submittals, at Edison and Santa Monica High School the District the air filtration was re-examined and the increased the MERV ratings to a minimum of MERV 11 where projects designs allowed. MERV 9-12 provided filtration in Hospital Laboratories to superior residential spaces. The District would attempt to move District wide to MERV 13-14 as the filter technology evolves. Typically, the filters need larger motors to operate MERV 13-16 filters.

Edison New Construction 2011-15
Occupancy of the main school occurred January 6, 2014. Phase two is currently progressing which includes the Demolition of the old buildings, Pre-school classroom , play yard and fields, and parking.
The air filters at Edison were specified originally as MERV 9 but actually contracted for MERV 11. Independent engineers have concluded the units can accommodate the potential to allow the MERV 13 filters after the building is completely commissioned by January 2015. Currently, the structure is still under the contractors commissioning warranty and phase two is underway.

**Air Quality Concerns**

April 2013, Air Quality concerns were presented by one of the parents, Ms. Suzanne Paulson, UCLA professor. Ms Paulson presented her arguments to the BBAC which requested the District provide MERV 16 filters and re-program the daily schedule to allow Physical Education/play yard hours be dictated by air quality readings.

**District Investigation**

MERV 16 filters are 6” thick and will not fit with the hybrid system, only MERV 9-13 are 2” thick filters. Only by one vendor, “IQ Air” manufactures a special 2” thick filter with the MERV 16 rating. Filters 6” thick require larger fan motors. However, the current fan manufacture does not recommend this filter as the motor unit must be replaced to increase the required pressure for the upsize of the Merv 16, as the Motor unit vendor only warrants up to MERV 13.

Additionally, “IQ Air” MERV 16 vendor is not willing to guarantee their product in this application either, as typically this filter is used in closed ventilation system not in a hybrid system.

District staff reviewed Ms. Paulson, facilities requests, scheduled an opportunity to present her concerns to the BBAC meeting of April 2013. The BBAC Committee concurred with staff recommendation:

- **Recommendation**
  District staff recommends we operate with the MERV 11 filter for a 10 month period. After that time period we will trial the purchasing of MERV 13 and MERV 16 filters on a few units.

- **Justification**
  - System was designed to operate with MERV 11 filters. Any other filters will not be covered under the contractor’s warranty. No changes should occur until one year warranty period expires.

- **Operation**
  - The fan shall be monitored through the computerized Building Management System (BMS) and will be overseen by Maintenance and Operations. The system can also be overridden by site administration.
  - Classroom is intended to be naturally ventilated without the use of the fan system.
Testing

Upon the completion of the project and as part of the CHPs commissioning process, staff will develop with consulting environmental program manager Dr. Shala Craig, Parsons Environmental Group and Arcadis a plan for testing and monitoring air quality for approximately one year. The objective is to determine the demands for changing filters.

The CHPs commissioning air testing has been completed for occupancy in January 2014. The report is in preparation by Arcadis. The report will be used as a baseline of the interior spaces to insure CHPs best practices and the contractor complied to all sustainable requirements. The raw data did not present any concerns preventing occupancy.

District Conclusions
The District is concerned with school environments. Our public schools have to meet higher standards than other public structures excluding hospitals. CDE, DSA, and other agency have established thresholds and protocols which have been in place and have been enforced. Additionally, the Board of Education has continued in seeking the best practices throughout our bond program by adopting sustainable programs such as CHPs and most recently, the EPA’s BMP “Tools For Schools”. To further our goals the Board of Education approved a contract with Environ Engineering to further our BMPs and specifically evaluate our environments and procedures to insure our classrooms are healthy spaces for our children.

Attachments:
MERV ratings
Photo of solar chimneys
Diagram of solar convention
Air fan filter impacts
# MERV RATING CHART

<table>
<thead>
<tr>
<th>Standard 95.5 Minimum Efficiency Reporting Value</th>
<th>Dust Size Efficiency</th>
<th>Arrestance</th>
<th>Typical Controlled Environment</th>
<th>Typical Applications and Limitations</th>
<th>Typical Air Filter/Cleaner Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>n/a</td>
<td>n/a</td>
<td>&lt; 0.30 pm particle size</td>
<td>Cleanrooms</td>
<td>Bag Filter-Nonsupportive</td>
</tr>
<tr>
<td>19</td>
<td>n/a</td>
<td>n/a</td>
<td>Viruses (unattached)</td>
<td>Radioactive Materials</td>
<td>Microderm filters or synthetic media, 12-36 in. deep, 6-12 pockets</td>
</tr>
<tr>
<td>18</td>
<td>n/a</td>
<td>Carbon Dust</td>
<td>Pharmaceutical Waste</td>
<td>Particulates</td>
<td>Box Filter-Non Woven Cartridge Filters 6 to 12&quot; deep in any size felt or paper media</td>
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<tr>
<td>17</td>
<td>n/a</td>
<td>n/a</td>
<td>All Carbonization smoke</td>
<td>Carcinogenic Materials</td>
<td>Box Filter-Non Woven Cartridge Filters 6 to 12&quot; deep in any size felt or paper media</td>
</tr>
<tr>
<td>16</td>
<td>90-95%</td>
<td>&gt;98%</td>
<td>3-10.0 pm Particle Size</td>
<td>General Surgery</td>
<td>Bag Filter-Woven</td>
</tr>
<tr>
<td>15</td>
<td>&gt;95%</td>
<td>&gt;98%</td>
<td>All Bacteria</td>
<td>Hospital Inpatient Care</td>
<td>Micronex or synthetic media, 12-36 in. deep, 6-12 pockets</td>
</tr>
<tr>
<td>14</td>
<td>90-95%</td>
<td>&gt;98%</td>
<td>Must Tobacco Smoke</td>
<td>Smoking Vaughs</td>
<td>Box Filter-Non Woven Cartridge Filters 6 to 12&quot; deep in any size felt or paper media</td>
</tr>
<tr>
<td>13</td>
<td>80-90%</td>
<td>&gt;98%</td>
<td>Poisonous Nicot (Nerves)</td>
<td>Superior Commercial Buildings</td>
<td>Box Filter-Non Woven Cartridge Filters 6 to 12&quot; deep in any size felt or paper media</td>
</tr>
<tr>
<td>12</td>
<td>70-75%</td>
<td>&gt;95%</td>
<td>1.0-36 pm Particle Size</td>
<td>Superior Residential</td>
<td>Bag Filter-Non Woven Cartridge Filters 6 to 12&quot; deep in any size felt or paper media</td>
</tr>
<tr>
<td>11</td>
<td>60-65%</td>
<td>&gt;95%</td>
<td>Humidifier Dust</td>
<td>Better Commercial Buildings</td>
<td>Bag Filter-Non Woven Cartridge Filters 6 to 12&quot; deep in any size felt or paper media</td>
</tr>
<tr>
<td>10</td>
<td>50-55%</td>
<td>&gt;95%</td>
<td>Milled Flour</td>
<td>Hospital Laboratories</td>
<td>Bag Filter-Non Woven Cartridge Filters 6 to 12&quot; deep in any size felt or paper media</td>
</tr>
<tr>
<td>9</td>
<td>40-45%</td>
<td>&gt;95%</td>
<td>Asthma Emissions</td>
<td>Welding Fume</td>
<td>Bag Filter-Non Woven Cartridge Filters 6 to 12&quot; deep in any size felt or paper media</td>
</tr>
<tr>
<td>8</td>
<td>30-35%</td>
<td>&gt;90%</td>
<td>3.5-10.0 pm Particle Size</td>
<td>Commercial Buildings</td>
<td>Pleated Filters- Disposable, 12-36 in. deep, 6-12 pockets</td>
</tr>
<tr>
<td>7</td>
<td>25-30%</td>
<td>&gt;90%</td>
<td>Mold Spores</td>
<td>Better Residential</td>
<td>Pleated Filters- Disposable, 12-36 in. deep, 6-12 pockets</td>
</tr>
<tr>
<td>6</td>
<td>&lt;5%</td>
<td>85-90%</td>
<td>Fabric Protector</td>
<td>Industrial Workplace</td>
<td>Pleated Filters- Disposable, 12-36 in. deep, 6-12 pockets</td>
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<tr>
<td>5</td>
<td>&lt;5%</td>
<td>80-85%</td>
<td>Cotton Dust</td>
<td>Painting Fume</td>
<td>Pleated Filters- Disposable, 12-36 in. deep, 6-12 pockets</td>
</tr>
<tr>
<td>4</td>
<td>&lt;30%</td>
<td>75-80%</td>
<td>1-10.0 pm Particle Size</td>
<td>Minimal Filtration</td>
<td>Throatway- Disposable</td>
</tr>
<tr>
<td>3</td>
<td>&lt;30%</td>
<td>70-75%</td>
<td>Pollen</td>
<td>Residential</td>
<td>Throatway- Disposable</td>
</tr>
<tr>
<td>2</td>
<td>&lt;30%</td>
<td>65-70%</td>
<td>Dust Mittey</td>
<td>Residential</td>
<td>Throatway- Disposable</td>
</tr>
<tr>
<td>1</td>
<td>&lt;20%</td>
<td>&lt;65%</td>
<td>Textile Fibers</td>
<td>Window/AC Units</td>
<td>Throatway- Disposable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Deepd Fibers</td>
<td></td>
<td>Throatway- Disposable</td>
</tr>
</tbody>
</table>
## Installation for IQ Air System

<table>
<thead>
<tr>
<th>Installation Breakdown</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>56 units (2 year supply) for an IQAir NanoMax MERV 16 filter</td>
<td>$4,200</td>
</tr>
<tr>
<td>Delivery and HVAC system placement</td>
<td>$490</td>
</tr>
<tr>
<td>1 Air Quality Monitoring Station for continuous monitoring of fine particles</td>
<td>$4,995</td>
</tr>
<tr>
<td>Air Quality Monitoring Station Installation</td>
<td>$300</td>
</tr>
<tr>
<td>1 Filter Life Coordinator and Gateway</td>
<td>$1,495</td>
</tr>
<tr>
<td>BMS Technology Installation and Coordination</td>
<td>$3540</td>
</tr>
<tr>
<td>14 x Wireless Filter Life Monitoring</td>
<td>$5,530</td>
</tr>
<tr>
<td>Motor replacement (includes $20,000 in Soft Costs)</td>
<td>$300,000+</td>
</tr>
<tr>
<td><strong>Installation Total</strong></td>
<td><strong>$20,810+</strong></td>
</tr>
</tbody>
</table>
To: Superintendent Lyon  
From: Jan Maez/Stuart Sam  
Weekly Memo: 02/28/14  

Project: Malibu Middle & High School Projects  
Subject: Summary of Work/Projects  

Background:  
Malibu Middle-High School projects are subject Coastal Commission and the Malibu Local Coast Plan review process. The process is in addition to the Division of the State Architect’s requirements. As a result, the project was expected to have an extended entitlement process. Additionally, the main new administration/modernization project triggered required scope such as the new fire alarm upgrade for the entire campus and new fire water supply main to the local area. The Architects and Program Management team determined this project could be broken into various parts, Fire alarm upgrades, Fire water supply main, new parking lot-temporary portables, and the main project-administration building. Other phases included IT-Technology upgrades and Lighting fixture upgrades.

IT-Technology Infrastructure:  
Schedule: 2009-present  

Scope: Upgrades for cabling, fiber optic feeds, Telephones, and various IT backbone infrastructure hardware. Work occurred in attic ceilings, electrical rooms and utility spaces. Recent underground work occurred in the summer of 2013. Work occurred in the main “Shark” courtyard and two classrooms in Building E. The proposed New IT 300sf enclosure has been postponed until further environmental protocols and reports completed.

Budget: Measure BB District Wide Technology allocation of 10.7m  

Contractors: Multiple, District IT, and Multiple Vendors  

Soil Remediation work:  
Schedule: 6/11 to 8/11  

Scope: Per the Phase 1 Environmental Site Assessment (ESA), Preliminary Environmental Assessment, (PEA), and Removal Action Work plan, completed by the environmental consultants, Arcadis, specific areas on the campus were identified as recommended targets for soil removal. The areas included exterior landscaped areas of the surrounding the main turf (Shark) courtyard. The removal of these soils and the confirmation testing were prerequisites before any project construction work could commence.

Budget: Measure BB Construction: $337,757  

Contractor: Innovative Construction Solutions, contractors  

Fire Alarm Upgrade:  

The Fire alarm upgrade included a new fire alarm system replacing old devices and new pathways linking buildings and structure to single main centralized fire alarm panel. The work included trenching in existing walkways, asphalt surfaces, and parking areas to interconnect the structures with underground conduits. Trenches were concrete backfilled after new conduits were installed and concrete encased.
Other conduits were installed in buildings leading into ceiling attic spaces and then distributed to rooms through new conduits in the above the ceiling areas. Additionally, IT underground pathways and conduits were also installed. Four HVAC units were replaced and Kitchen hood fire suppression system was upgraded as part of the fire alarm system. Temporary corrections and adjustments were made to structures which are planned for demolition as part of the main project included existing administrative building and relocatable structures.

Justification of phasing increased the safety of the school; expediting the fire alarm upgrade replaced the existing system three years earlier than proposed concurrent construction with the main project.

Budget: Measure BB $1,552,486.05
Contractor: Moment construction

**Fire Water Supply Main:**
Schedule: 9/2011-12/2012
Scope: The Fire Water Supply Main project was imposed by the Fire Department as an upgrade requirement. The water flow within the area was not adequate to supply the surrounding neighborhood or the school district. The work included installing a new water main off site of the school District. All work occurred in the city and county public ways. The work was overseen by the city, county and school District.

Budget: Measure BB $431,425
Contractor: Blois Construction

**Waste Water System: Equipment Design-Build Manufacturer:**
Schedule: 11/2012-01/2013
Scope: As part of the DSA and governmental agency reviews/plan check process, the Design Manufacturer was required to be selected and their waste water system/equipment required detailed manufacturers specifications and design drawings prior to any fabrication or the construction commenced. The district competitively bid the system and the contractor was selected and issued a directive to provide drawings, designs, and specification for DSA and Regional Water Board review and approval. No physical work was implemented except for drawings and designs. The design criteria required water sampling and monitoring from the existing systems in place. Contract includes Drawings, Designs and equipment.

Budget: Measure BB $41,249 for Design/drawing submittal ($415,903 total contract)
Contractor/Manufacture: GE Water and Technology

**Stadium Lights:**
Schedule: 12/2012-8/2013
Scope: The Main Project new construction/modernization plans include work to provide new Stadium Lights. The lights were eventually removed from the Measure BB project. Work to provide new Stadium project commenced as a non-BB funded project. The work included new underground electrical to power the four pole lights. The trenching was around the track/field terminating at the main distribution panels in the field restroom area.

Budget: Non-Measure BB $171,153 Lighting, Underground power Installation contract
Contractor: RDM Electrical Contractors

**Main Project: New Construction/Modernization:**

Schedule: construction pending

Scope: The Main Project: New construction/Modernization plans include the removal and new construction of the Administrative building and library with additional classrooms; The Modernization portion include the renovation and addition to Building E; and new 150 space parking area and modernizing of exterior areas including the existing parking lots and courtyards.

The current entitlements such as DSA approvals have been received. The Coastal Development Permit application was reviewed by the Malibu Planning Commission and appealed by the community at the Coastal Commission level. The District was instructed by both the City and Coastal Commission to meet with the Appellants to attempt reconciliation. Plans were submitted with revisions attempting to address Appellants issues. The Coastal Commission and City of Malibu Planning had further submitted to the District further concerns by the Appellants. The District is working to address those further concerns with our Design and CEQA consultants. The District objective has been to attempt to address Appellants concerns so the appeal can be withdrawn. The Coastal Commission must evaluate the project plans and determine there are no substantial issues to avoid a new hearing process.

Since the City Planning Commission, the Design has now included proposed lighting mitigations which would provide equivalent lighting standards to the proposed new 150 space lot “Dark Skys” lighting Zone 1 (residential standard) vs. brighter School standard lighting zone 2; reduced pole heights from 18ft to 12ft; and retrofitting existing campus exterior building with LED and Dark Sky approved fixtures; motion controlled lighting sensors throughout parking lots; and the finally re-modeling the photo metrics analysis per the appellants lighting model.

**Budget: Construction $28,897,744**