Bond Program Final Report

Boulder Valley School District

June 12, 2012

CITIZENS' BOND OVERSIGHT COMMITTEE
FINAL REPORT TO THE BOARD OF EDUCATION

Summer 2012

To the members of the Boulder Valley Board of Education,

The document that follows this letter outlines the successful completion of the District's commitment of the 2006 Bond approved by the voters for improvements to and construction of school facilities.

As part of the original plan and per the Board's direction, this advisory committee was formed to provide an independent review of the expenditures of over $296 million for bond projects as set forth in the Educational Facilities Master Plan of June 2006. Our committee was composed of parents and administrators from many schools and from each municipality in the District. All of our meetings were open and time was made available for public comment. This format allowed for continuity and for input from the individual schools and communities.

The CBOC would like to thank and commend the capable staff of the Operations and Financial departments. Their talent and dedication shepherded these projects to maximize the value of each dollar provided by the tax payers.

Our committee's visits to schools illustrated for us how each student, teacher, and staff member in the District has been touched in positive ways by the building improvements. It is with great pleasure that we celebrate with you the success of this six-year effort.

Juana Gómez, Chair
Citizen's Bond Oversight Committee

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Boulder Valley School District
BOND PROGRAM
It's all about the kids!

Program Overview

Program Overview

In November 2006, Boulder Valley School District voters generously authorized a bond issue allowing the district to borrow $296.8M for critical repairs and capital improvements to district infrastructure. The 2006 measure was different from many prior Bonds both in the unprecedented amount and because the money would be used to fund improvements in every school in the District. The successful election was the fruition of nearly four years of work by the Capital Improvement Planning Committee and District staff which produced the Educational Facility Master Plan describing the improvements slated for each school. With the support of the Bond measure, Boulder Valley voters entrusted the District with an exceptional opportunity to significantly improve all our facilities and positively impact generations of BVSD students well into the future. This report documents how the commitment to voters outlined in the Master Plan was fulfilled.

Projects

Timeline

Original planning called for the program to be implemented in three phases over six years. Phase 1 kicked off in March 2007 and included larger projects with longer construction schedules. To minimize impacting students with multiple construction experiences, many high school and middle school projects were slated in the first round. Staff tried to distribute the first round projects among all BVSD communities.

The recession that began in 2008 put pressure on the construction market driving down bids. To take advantage of this favorable market, Phase 2 was split into two sub-phases and started six months ahead of schedule in the fall of 2009. Staff was able to maintain the aggressive implementation pace and finished the entire program ahead of schedule. The early completion created an estimated $2.5M in overhead savings due to staff attrition compared with original estimates and provided benefits to students and the taxpaying community earlier.

The low bids produced by the competitive bid market allowed project managers to add value to projects in many cases. Typically school communities provided input on prioritizing the additional work through the design advisory team process.

Program Delivery

BVSD chose to manage the program in-house with contracted support from Heery International in the form of two project managers and a safety manager. Many of the processes used to manage the program were developed by staff at the onset of the program. For example, Bond procurement staff developed procedures for prequalifying and selecting architects and contractors. The procedures were designed to be equitable, thorough and defensible. They were reviewed by the Citizens' Bond Oversight Committee and used throughout the program.

Three different construction contracting methods were used in the program, depending on the nature of the project. For larger, more complicated projects, the construction manager/general contractor was used. With this type of contract, the general contractor is brought into the project earlier in the design phase to provide input related to constructability, schedule and estimating. Having cost estimates during the design phase allows the architect to refine the scope and design to stay within budget. It is especially beneficial to have contractor input related to phasing to minimize the disruption to schools during construction. There also tend to be fewer design changes during construction (which can be costly) because of the additional input related to constructability during design. This method was used for projects such as Broomfield High, Boulder High, Columbine Elementary, Casey Middle, Manhattan Middle and Foothill Elementary.

The hard bid method was used for smaller, simpler projects such as Lafayette Elementary, Coal Creek Elementary and Aspen Creek K-8. With this method the construction contract is given to the lowest bidder, resulting in cost savings. Because the projects are not as complex, there is not as much need for advance input from the contractor and the additional cost this carries.

In a limited number of projects, the design-build method was used. In this approach, design and construction services are provided by the same company. It works well for small, straight-forward projects that do not

require a high level of design. This contract method was used in the Education Center electrical upgrade renovation.

To assure consistent safety practices on all projects, the Bond Safety Project Manager developed the BVSD Construction Safety and Health Manual. All contractors were required to participate in the District's safety orientation. Safety presentations were given to staff and students at schools prior to the start of construction. All construction crew members who participated in the training and were authorized to be onsite received stickers for their hard hats.

Scope

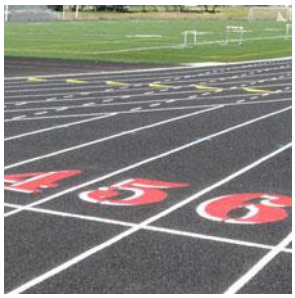
This Bond Program was the largest in the District's history and was the first to address deficiencies in every building. Needs at each building were presented in the master plan in four categories: physical condition of the building (facilities condition index), ability to support the delivery of the education program (program compatibility index), condition of outdoor play and athletic facilities (multi-use outdoor facilities) and Information Technology improvements. The Educational Facility Master Plan emphasized improving learning spaces to support teachers with more than $200M of the budget directed toward this function.

Through the program, two new schools (Columbine Elementary and Casey Middle) were constructed to replace existing facilities, which due to age and deteriorated conditions were beyond renovation and no longer supporting modern curricula. At all schools, new learning spaces were constructed and/or existing spaces were renovated and modernized. Administrative and security improvements were constructed at 38 schools. The total square footage of District facilities increased by 422,334 to create a total of 4,501,669 sq. ft.

The Bond Program also invested in upgrading building systems and improving the overall condition of facilities. Work included items such as fire alarm upgrades, heating, ventilation and air conditioning (HVAC) upgrades, intercom systems, clocks, some boilers, interior finishes upgrades and restroom renovations.

Much needed improvements to athletic facilities were made to middle and high schools across the District, including an artificial turf field at Nederland Middle/Senior High School which had been the only high school without one. Other notable improvements include new gyms at Boulder High, Southern Hills Middle, Centennial Middle, Summit Middle, Mesa Elementary, Bear Creek Elementary, Flatirons Elementary, BCSIS/High Peaks, Horizons K-8 and Emerald Elementary. An eighth lane

was installed on the track at Broomfield High and new tennis courts were constructed at Centaurus High. More information about the athletic improvements is included in the project summaries.



A Playground Master Plan was created which included an inventory of conditions and equipment at every elementary school as well as design guidelines. Some of the over-arching goals of the guidelines were to create a district-wide playground improvement mechanism and to identify needed improvements. Many playgrounds were renovated through the Bond Program and the upgrades focused on updating equipment, addressing safety issues and improving Americans with Disabilities Act (ADA) accessibility.

Information Technology

The Information Technology scope of work in the master plan identified four separate components:

- Upgrade the Wide Area Network (WAN) to provide capacity to support applications with high bandwidth demands;
- Upgrade Local Area Networks (LAN) to provide reliable and responsive access to data and provide wireless coverage in all District buildings;
- Implement Voice over Internet Protocol (VoIP) to enhance communications capabilities and reduce cost and
- Install digital projector systems in some classrooms and create a video library and distribution system.

Shortly after the Bond measure was approved by voters, the Board of Education created the Information Technology Advisory Committee (ITAC) to help the district identify the best approach to fulfilling our networking needs. The committee was comprised of voluntary members representing Chief Information Officers from each of the cities and counties of Boulder Valley School District as well as representatives from the University of Colorado, the local Federal labs and two citizens at large. The committee also helped with the evaluation of proposals and selection of a vendor. The Information Technology Advisory Committee (ITAC) helped the

district develop a request for proposal to solicit the professional services we needed. From that group emerged the idea of “asset sharing” among local entities. These partnerships allowed resource sharing and cost savings which enabled the District to expand the scope of IT improvements.

Concurrent with the work of ITAC, BVSD hosted several workshops for staff to help identify the technology that should be available in all the physical spaces throughout the district. District staff members were invited to attend and provide input about how technology could be used in their particular areas. The outcomes of the workshops were used as guidelines for the Local Area Network upgrades.

More detail about the IT projects can be found in the Project Summaries section.

Community Oversight and Involvement

The Educational Facility Master Plan was created through the community-based Capital Improvement Planning Committee. Public oversight and involvement was continued through the implementation of the program via the Citizens’ Bond Oversight Committee (CBOC).

The language of the ballot measure called for monitoring of the Bond Program by a committee and shortly after voter approval of the Bond, the Board of Education appointed a slate of community members representing District stakeholders to serve on the team. The committee met approximately every other month and, along with staff, presented quarterly reports to the Board.

The major functions of CBOC were to 1) review and recommend to the Board of Education significant changes in scope and/or budgets of projects in the Educational Facilities Master Plan; 2) review and recommend transfers of funds to project or program reserve from project savings or interest earnings; 3) review and recommend proposed expenditures for surplus bond funds.

The committee also acted as a liaison to the community, giving presentations to city councils and submitting guest opinions to the *Daily Camera.*

Such monitoring and review provided a high level of accountability and transparency on behalf of the Board of Education to the citizens of the district.

To provide regular communication, the District hired a Bond Communications Specialist who was responsible for creating a communications plan which included the creation and maintenance of a website for the Bond Program as well as providing communications support to schools and Project Managers. The website included detailed information about the scope of work, budget and status of each project, monthly financial reports, bid notices and information related to the Citizens' Bond Oversight Committee.

The District chose to use the Design Advisory Team (DAT) process in designing the projects of the Bond Program. BVSD developed the process in-house and refined the guidelines after Phase 1 to reflect lessons learned. The DAT is a group of representatives from the school community that worked with each project architect to ensure decision-making was community based and that projects met the needs of individual schools and expectations of the community. One of the key responsibilities of DAT members is to act as an informational liaison within the school community by sharing information and communicating progress of the group.

The DAT process provided a means by which the stakeholders in the project could participate in giving direction to the professional design team and a forum in which competing interests could be debated and measured against the needs of the school. The DATs addressed a variety of school/community issues such as traffic and circulation concerns or community objection to the selected design. The District was pleased with the level of community involvement provided through the DAT process.

Opportunity

For the District, the Bond Program provided the opportunity to address many long deferred maintenance items and renovate facilities to support delivery of modern curricula. The Program also created the opportunity to help our schools fulfill our community's vision for them. Since the funds would be distributed into schools throughout the District, we were able to implement broad initiatives and respond to new ideas and expectations in terms of improving security in schools, employing green building practices and implementing changes in how meals are delivered to students.

Security

The Educational Facilities Master Plan called for renovations of administrative offices which are often located at the front entry at many schools. This requirement created the opportunity to redesign the front entrances to provide better security in addition to improving functionality

for staff. In many cases, the reception desk was located in line of sight with the front door and many windows were installed to increase visibility. In addition, visitors are typically directed through the main office to check in during the day. In some cases, electronic security controls with identity card or fob readers were installed on doors.

The remodeling of the administrative offices also provided the opportunity for architects to create a more recognizable entrance and give the school a new look with an architectural feature at the font entry.

Nutrition Services

The implementation of the Bond Program coincided with an overhaul of the District's model for meal delivery. The new model under the School Food Project calls for cooking from scratch with fresh food. Meals are prepared in larger prep kitchens at schools throughout the District and then delivered to warming kitchens at other schools. With this new model came the need for kitchen renovations and new equipment. The Bond Program was able to help support the effort in schools already slated for kitchen and cafeteria remodels in the Master Plan.

Green Building

In the 2006 bond issue ballot language the district committed to implementing cost-effective, environmentally-friendly and energy efficient design and construction strategies. The project summaries in this report capture many of the specific sustainable features in each project. Items that support BVSD's sustainability goals are marked with a green logo ( ). The following measures represent some of the broad-based steps the school district took toward building sustainability in the Bond:

- BVSD's technical specifications were updated to require the use of sustainable elements such as high efficiency heating and cooling systems and low volatile organic compound (VOC) emitting paints and carpets. VOCs are gasses emitted from some solids and liquids which may have adverse health effects.
- Many of the architects that were awarded contracts were chosen because they had at least one Leadership in Energy and Environmental Design (LEED) Accredited Professional on staff, and/or had designed a LEED Registered or LEED Certified Project as a company. We relied on the expertise of these professionals to incorporate sustainable design into the projects to the extent possible.

- Much of the furniture removed from buildings during remodels was dismantled and the materials were sent to appropriate recyclers.
- Where possible we are re-using products and fixtures in remodels. We also are working with local company “ReSource” to divert waste from landfills by salvaging furniture, fixtures and other materials.
- We established environmental standards for portable classrooms used in the bond program.
- The District continues to implement energy- and resource-wise strategies employed in previous bonds, such as low-maintenance landscaping, efficient irrigation systems, low-flow water devices, Energy Star appliances and recycled content materials.
- The District received $252,195 in rebates from Xcel for energy efficiency measures installed in projects.
- Most new construction feature windows and skylights to provide natural daylight which enhances learning environments.

The District is particularly proud of the Casey Middle School project, which, thanks to a partnership with the City of Boulder, is BVSD’s first LEED certified building and received the highest level of LEED designation—Platinum.

For more information about BVSD’s Bond Program, go to: http://bvsd.org/bondproject/Pages/default.aspx.

Financial Management

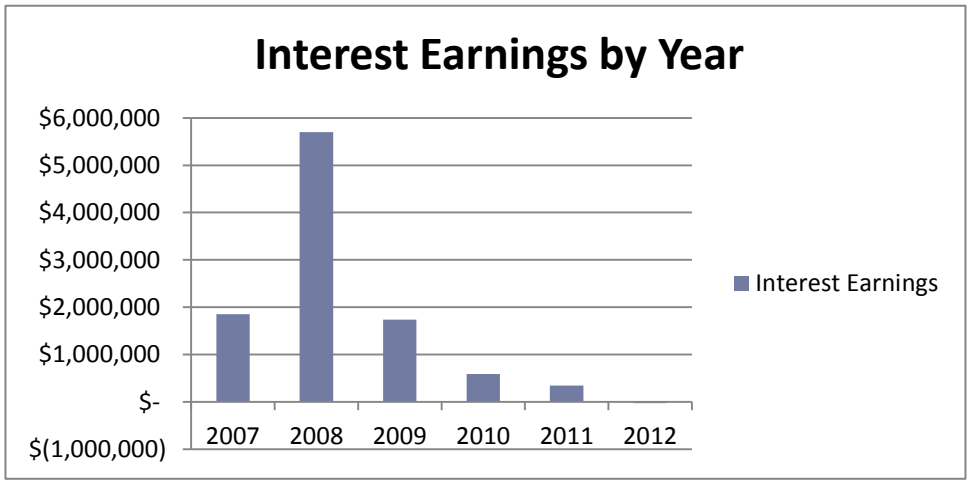
Financial Management

Timeline

Original planning called for the issuance of debt in three increments coinciding with the three phase implementation over six years. The first round of bonds was issued in February 2007 just prior to the kick-off of Phase 1. To take advantage of a favorable construction market, staff decided to issue the remainder of the debt in one sale to get projects bidding and started sooner. The sale of the remaining $176.8M was successfully completed in March 2009. Staff estimates the District saved approximately $350,000 in fees by doing two issuances instead of three. In addition, the second round of bonds was sold in a market that was paying lower interest rates to investors. The District's original projections were for a total repayment cost of $629,450,000 over 25 years. The actual repayment cost will be $536,044,773, a $93,405,227 reduction in the tax obligation for property owners.

Interest Earnings

Cash proceeds from the sales of bonds were held in interest earning accounts until needed. Over the life of the program, interest earnings totaled approximately $10.3 million. Of this amount, $988,566 was refunded to the Internal Revenue Service as an arbitrage payment as interest earnings exceeded that allowed by the covenants of the bonds. This left a net balance of approximately $9.3 million available for use by the District.



These funds, in conjunction with project savings and premium dollars from the sale of the bonds, were used to fund overhead costs, program reserve, and other school projects.

Overhead

In 2007, initial overhead projections were calculated at approximately $15 million, or 5% of the $296,808,810 approved by the voters. The decision was made to split these expenses evenly among the individual project budgets and interest earnings. Thus, 2.5% of each project budget was allocated to cover project management costs. The acceleration of the bond program created savings in overhead through earlier reduction in staff and paying less in issuance fees with two Bond sales instead of three. Actual overhead expenses were approximately $10 million. This reduction in overhead costs allowed us to divert these funds into projects through supplementary funding allocations.

Overhead costs included salary and benefits for all bond staff. In addition, overhead funds were used to renovate existing Education Center spaces for bond staff use for the duration of the program. These costs included construction, furniture fixtures and equipment, as well as computers for staff. In late 2011, this office space was relinquished to the Community Schools Program. Additional overhead funds were used to purchase construction management software, cover legal costs, provide cell phones to project managers and cover general administrative and office expenses.

Program Reserve

The Educational Facilities Master Plan provided an initial Program Reserve of $5.3 million which was intended to cover costs from unknown factors that could arise in projects. Additional program reserve funds were allocated from interest earnings by the Board of Education in the amounts of $3 million for Phase II projects and $2.5 million for Phase III projects. These funds were managed by the Executive Director of Bond Planning, Engineering and Construction and were used primarily to address unanticipated additional asbestos abatement and fire suppression requirements as well as funding budget shortfalls when necessary.

Program Reserve was used to address two critical issues in particular—fire sprinklers and asbestos. Due to a new interpretation of fire codes, more extensive renovation/installation of existing sprinkler systems was required than was anticipated in the master plan. In addition, more asbestos was discovered in the buildings than anticipated. These two items added significant cost to projects. We were able to augment

budgets from Program Reserve to address these issues in a timely way, keeping projects on schedule and delivering scope. The existence of these funds proved to be an invaluable component of the Bond Program as without them, project scope would have been reduced by $10.8 million.

Project Savings

In situations where project scope was met but budgeted funds remained unspent, the monies were returned to a category of surplus funds labeled project savings. These funds were placed under the discretion of CBOC for reallocation through the Surplus Funds Allocation Process adopted by the Board of Education. Approximately $3.9 million was returned in this manner. These funds will be used on approved surplus funds projects over the next three years as an augmentation to the Districts ongoing capital maintenance budget.

Surplus Funds

The combination of interest earnings and project savings created an opportunity for the Bond Program to provide additional benefit to schools. As mentioned previously, some of the interest earnings were allocated to Program Reserve. The remaining earnings combined with project savings were used to augment scope in projects.

Staff worked with CBOC to develop a process for allocating Surplus Funds. Aligning with the programmatic emphasis of the Educational Facilities Master Plan, the first priority for supplemental funding was for programmatic needs and was given to schools whose Bond projects required a change in scope due to enrollment changes or changes in the educational program. CBOC recommended, and the Board of Education approved, supplemental funds for the following projects:

Arapahoe Ridge	$ 100,000
Broomfield Heights	$ 917,000
Columbine	$2,000,000
Community Montessori	$ 850,000
Creekside	$ 370,000
Halcyon	$ 200,000
Horizons	$ 900,000
New Vista	$ 200,000
Total	**$5,537,000**

The second priority for the allocation of surplus funds under the Surplus Funds Process was to address facility needs identified in the assessment but not funded in the voter approved Educational Facility Master Plan. The Citizens' Bond Oversight Committee determined that the balance of surplus funds would be spent on projects in a pre-approved list of

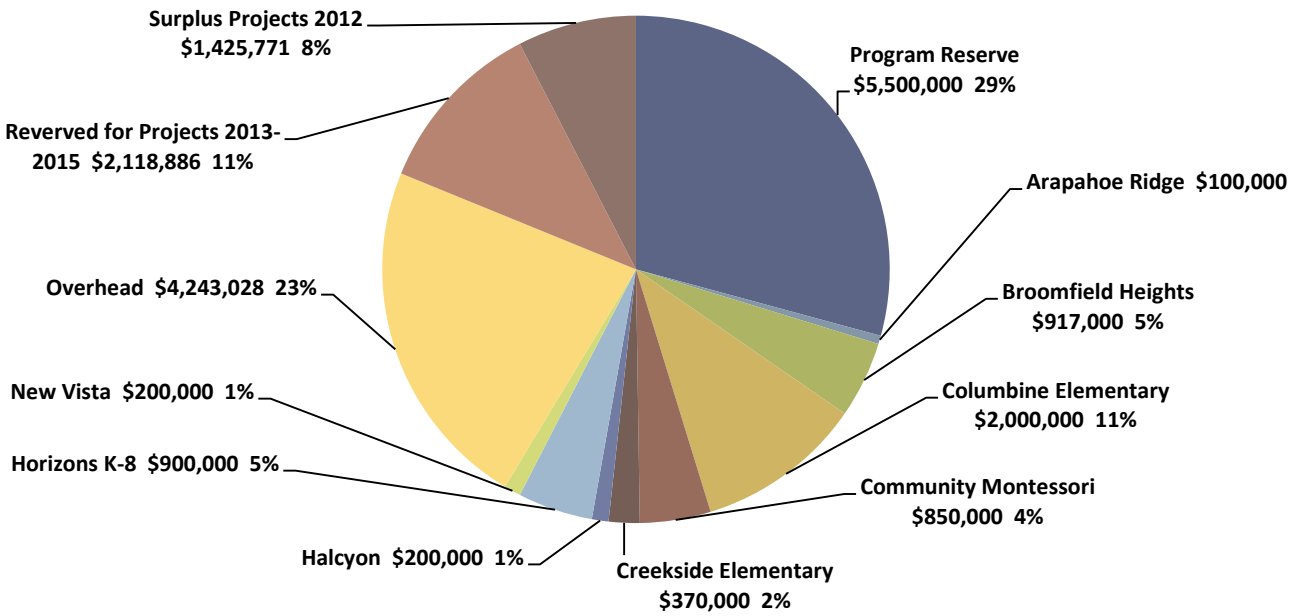
categories (e.g. plumbing, HV system improvements and life safety items). The categories reflected the most critical needs identified in the original facilities master plan and through recent interviews with BVSD Maintenance staff.

A portion of these surplus funds will be used to complete Capital Reserve projects, reducing the financial burden on the General Fund and allowing the General Fund to support staff to conduct facilities assessments and long term facility planning.

Interest Earnings/Bond Premium Allocation 04/30/2012

Revenue		
Interest Earnings (Projected)	$10,367,995	
Less: Arbitrage Costs[1]	(988,566)	9,379,429
Premium on the Sale of Bonds	5,699,443	
Less: Issuance Costs	(1,843,237)	3,856,206
Miscellaneous Local Revenue[2]		1,714,315
Project Savings[3]		3,874,736
Total Revenue		**18,824,686**

Allocation		
Program Reserve:		
Program Reserve Phase II	3,000,000	
Program Reserve Phase III	2,500,000	5,500,000
Projects:		
Arapahoe Ridge	100,000	
Broomfield Heights	917,000	
Columbine Elementary	2,000,000	
Community Montessori	850,000	
Creekside Elementary	370,000	
Halcyon	200,000	
Horizons K-8	900,000	
New Vista	200,000	
Reserved for Projects 2013-2015	2,118,886	
Surplus Projects 2012	1,425,771	9,081,657
Overhead:		
Salaries and Administrative Expenses (Projected)	7,896,503	
Less: Chargeback to Projects	(3,653,474)	4,243,029
Total Allocated Funds		**18,824,686**
Funds Available For Allocation		**0**



[1] Interest earnings are limited in governmental bond issues. The excess, called arbitrage, is remitted to the IRS.
[2] Includes contributions by municipalities, PTOs and schools to supplement projects.
[3] Funds were returned to surplus once scope had been met.

*****All figures are unaudited and will be recalculated at the end of the program.**

Project Summaries

Angevine Middle School

Project Architect: LKA
General Contractor: FCI Construction
Completion Date: Summer 2011

Original Facility Master Plan Budget	*$1,754,718.00*
Return to Surplus	($132,517.99)
Total Project Value	**$1,622,200.01**

The Angevine Middle School project renovated the main office and front entry as well as the library, Special Education rooms and the Technology Lab. In the main office, the reception area was remodeled and a new double-door security entry vestibule was constructed. During the day, visitors are directed through the office to check in before entering the building, increasing security for the school.

Existing Special Education rooms were relocated and upgraded to better serve the school's needs, including creating an accessible computer room dedicated for Special Education use. The Technology Lab was renovated to expand student work stations, provide more storage and remove old carpet and provide a more durable, stained concrete floor. Two small group instructional spaces were constructed in the library. The rooms have interior and exterior windows to provide daylight to the rooms and the library. The project also provided the school with a new outdoor storage shed. A significant portion of the roof was replaced. In addition upgrades were made to the irrigation, interior signage and communications system.

Green Building Features

Sustainable Sites

- New roof material reflects heat.
- Site lighting is shielded and directed downward to reduce light pollution.

Water Efficiency

- Irrigation system was upgraded to provide more efficient watering and zoning.
- Most new restroom fixtures are low flow and utilize sensor operated flush valves.

Angevine Middle School

Materials and Resources

- Where possible, existing space rather than new construction was used to fulfill the project scope. This reduces material use and building footprint.
- The contractor separated waste for recycling.
- Salvaged materials included carpet tiles, ceiling panels, marker boards, projection screens, doors and frames, toilet accessories, clocks, digital projectors and light fixtures.
- New materials with recycled content included vinyl wall covering, ceiling panels, vinyl composition tile, sheet vinyl flooring, gypsum board and carpet.*
- To reduce material use, floors were finished as polished concrete.
- Brick, gypsum board and concrete were locally purchased.

Energy and Atmosphere

- Mechanical systems meet or exceed code requirements.
- Remodeled areas included occupancy sensor lighting controls.

Indoor Environmental Quality

- To improve acoustics in new learning spaces, insulation and sound absorptive panels were installed and interior walls were extended to the roof deck.
- New fan units were installed in special education and computer classrooms to provide additional ventilation.
- Low VOC materials and products such as paint, adhesives and flooring material were used to improve air quality.
- Large windows on new interior walls maintain outside views and daylighting.
- Mold resistant gypsum board and cement fiberboard were used in moisture prone areas. Exhaust fans were installed in these areas.

*Items marked with indicate BVSD sustainability goals.

Arapahoe Ridge Campus

Project Architect: RTA Architects
General Contractor: W. O. Danielson Construction
Completion Date: Summer 2010

Original Facility Master Plan Budget	*$5,333,778.00*
Surplus Funds - Approved by BOE 4/27/2010	$100,000.00
To Meet Scope - From Program Reserve	$196,730.86
Revised Master Plan Budget	**$5,630,508.86**
Rebate from Xcel Energy for efficiency measures	$47,025.50
Funding from 2010 3A for improvements to the Teen Parenting Center	$1,333,696.00
Total Project Value	**$7,010,050.37**

The Arapahoe Ridge project included the construction of a new two-story classroom wing which houses the library, computer lab, Options Academy and Teen Parent Center. The scope of work for the project was amended by the Citizens' Bond Oversight Committee and the Board of Education to move the Teen Parent Center from Fairview High School to the Arapahoe Campus. Housing the program at Arapahoe Campus is more convenient for many of the teen parents who are enrolled in TEC programs and the new facility can accommodate more infants, allowing a greater number of students to be served. The Teen Parent Program is also a Career and Technical Education program that educates teen parents about child care and parenting. Students that participate in the program receive day care for their child and a one-year technical certificate.

The project also included construction of a new cafeteria/student commons which has enhanced the community feel of the campus. A new double-door security entry vestibule was constructed. During the day, visitors are directed through the main office to check in before entering the school. The counseling offices were expanded and relocated to the new wing. The project received Surplus Funds for additional furniture for the Teen Parent Center and for the renovation of classroom 318 into a foods lab which will allow for the ProStart, an advanced culinary arts program. Also included in the project were upgrades to building systems such as fire alarms and interior signage.

2010
Summit Design Merit Award
Council of Educational Facility Planners International
Rocky Mountain Chapter

Arapahoe Ridge Campus

Green Building Features

Sustainable Sites

- Existing onsite native habitat was avoided in the scope of work.
- Light colored roof was installed on the cafeteria to reduce heat gain.
- Full-cut off light fixtures were installed on the exterior of the building to prevent light pollution.
- Existing bus stop was relocated to improve access.

Water Efficiency

- New fixtures are low flow. Older fixtures were retrofitted with battery operated auto-flush valves.
- New spaces were designed to be 30% more efficient than code for water use.

Materials and Resources

- The design solution reconfigured existing space before building new.
- Carpeting and concrete used in the project contained recycled materials. Masonry was locally sourced.

Energy and Atmosphere

- New spaces were designed to be 30% more energy efficient than code.
- Insulation was upgraded in existing spaces where extensive remodeling occurred.
- The new cafeteria was designed to support future installation of solar panels.

Indoor Environmental Quality

- Ceiling materials with high acoustic ratings were used in new spaces and acoustical panels were installed in existing spaces to improve acoustics. Tectum deck made of renewable wood fiber was used in the commons/cafeteria to reduce material and improve acoustics.
- Outside air flow was increased in spaces with inadequate ventilation and four air handling units were replaced.
- New spaces took advantage of opportunities to showcase outside views and bring daylight in. Appropriate overhangs over windows reduce heat gain.

Aspen Creek K-8 School

Project Architect: RTA Architects
General Contractor: Golden Triangle Construction
Completion Date: Summer 2011

Original Facility Master Plan Budget	*$964,370.00*
Return to Surplus	($140,709.98)
Revised Facility Master Plan Budget	**$823,660.02**
3A funding for preschool classrooms and playground	$1,095,550.00
Total Project Value	**$1,918,834.02**

The Aspen Creek K-8 School project included construction of two new wings totaling 9,291 sq. ft.; a two-story classroom wing that houses Special Education and Literacy support and a single-story wing that houses preschool classrooms. Funding for the preschool classrooms was supplied through the 2010 Referendum 3A ballot measure.

The choir room was enlarged to accommodate larger class sizes. Existing learning space was renovated to provide break out space for occupational therapy and physical therapy. Renovations were made to improve ventilation and acoustics in the gym. New equipment and play surfaces were installed on the playground to offer more play activities and improve safety and ADA accessibility. In addition, improvements were made to the acoustics and ventilation in the gym as well as to building systems such as HVAC and exit signage.

Green Building Features

Sustainable Sites

- Two-story addition minimized the footprint of new construction.
- Additional bike racks were installed.
- Full cut-off light fixtures on the exterior of the new addition direct light down, reducing light pollution and making the fixture only visible from directly below.

Water Efficiency

- Irrigation controls were upgraded to increase efficiency.

Aspen Creek K-8 School

Materials and Resources

- A construction waste management plan was created to divert at least 50% of construction waste.
- Carpet, sheet flooring and concrete contain recycled materials

Energy and Atmosphere

- Commissioning occurred during construction.
- Tubular skylights and daylight sensors increase efficiency of lighting.
- Highly efficient insulation was installed in walls and roof of the new addition.
- Light shelves direct daylight deeper into rooms to reduce electric lighting demand and exterior window shades reduce glare and heat gain.

Indoor Environmental Quality

- Ceiling materials with high acoustic ratings were installed in new classrooms. An additional layer of gypsum board was installed between classrooms and the hallway.
- Dual-switch lighting in classrooms allows for more occupant control.
- Large windows in new classrooms maximize views and daylighting.

Bear Creek Elementary

Project Architect: RTA Architects
General Contractor: Adolfson and Peterson
Completion Date: Summer 2011

Original Facility Master Plan Budget	*$6,457,529.00*
Return to Surplus	($37,607.82)
Total Project Value	**$6,419,921.18**

The Bear Creek Elementary School project included construction of four new additions totaling 15,305 sq. ft. and extensive interior remodeling as well as playground renovations and building repairs and system upgrades.

The new administration addition was constructed on the southeast corner of the existing building and provided the school with more space for administrative offices, a more recognizable and more secure front entry, new health room, storage, conference room, reception area and work room. The former administration space was remodeled into new space for Special Education which allowed for the program to be consolidated in an upgraded space.

The new entry is designed to increase security by making the front door more visible to office staff and routing visitors through the office to check in during school hours.

The new gym addition was constructed on the southwest corner of the existing building. In addition to the gym space, it includes an office, storage, restrooms, a stage which can be viewed from the gym and stage support space. The former gym space was renovated into classrooms for science, music and art. These spaces access an outdoor patio and have large windows which frame scenic views and provide copious daylight.

The former art room on the west side of the school was expanded with an addition and converted into the new library. The location maintained direct access from the grade level classrooms and provided the opportunity to showcase mountain views with large windows that also provide abundant daylight. The addition also includes a computer lab. The

"Today we allowed all our students to tour through the new gym and library. Because the fifth graders will only enjoy the new areas for the last two months of the year, we allowed them to be the first to experience the gym during their recess today. The rest of the school will begin enjoying the new spaces after break.

All students agreed it is perfect, and I appreciate everyone's effort to give our students an absolutely beautiful, functional space!!!!! Thank you!!!!!!!"

Kent Cruger, Bear Creek Principal

Bear Creek Elementary School

former library space was remodeled into a multi-purpose room and smaller learning spaces. The existing cafeteria was expanded to the west to provide more seating space and storage for tables and chairs. Flooring was upgraded. The kindergarten learning spaces were expanded and finishes were upgraded.

Interior renovations included expansion of the faculty lounge, sound mitigation between classrooms, carpet upgrades in some locations and raising the ceiling in some locations.

Site improvements included construction of an outdoor classroom and a community garden. The playground was renovated with new equipment and play surfaces to offer more play activities and improve safety and ADA accessibility. Electrical service to the school was upgraded and improvements were made to building systems such as intercom, irrigation, clocks and interior signage.

Green Building Features

Sustainable Sites

- Additions were placed on the south and west façade to maximize views, passive solar and daylighting.
- A sitting area was incorporated into the design adjacent to the entry with new ADA pedestrian access from the public right of way and adjacent neighborhood. Additional bike and skate board racks were installed.
- Construction was planned to avoid impact to an onsite nature preserve.
- Additions were designed within existing hardscaped areas at existing parking and asphalt playgrounds, minimizing impact on open space. A 6,000 sq. ft. community garden was constructed.
- A white membrane roof was installed on new construction areas to reduce heat gain.
- Existing exterior light fixtures were replaced with full cut-off fixtures which direct light downward to reduce light pollution.
- The new gymnasium was designed to allow for community use after hours.
- An outdoor classroom was constructed on site.
- Additional bike parking was installed.

Bear Creek Elementary School

Water Efficiency

- Low water use vegetation was planted in new landscaping.
- Low flow fixtures were installed in new areas. In existing restrooms, lavatories and urinal fixtures were retrofitted with battery operated auto-flush valves.

Materials and Resources

- There is a dedicated place for collection and storage of recyclables at the main entry to the building.
- Using existing space to fulfill the scope of work was a high priority in the design.
- The construction waste management plan called for the separation and recycling of construction waste.
- Acoustic ceiling tile contains recycled content.
- Masonry, concrete, glass and insulation were locally sourced.

Energy and Atmosphere

- Basic system third party commissioning was included in review of the design development and construction documents and performed after construction.
- Continuous insulation was installed in new construction.
- Windows have high performance glazing.
- Exterior sun shades were installed on south windows.
- High efficiency boilers were installed.
- Energy recovery HVAC units were installed in the gymnasium.
- Non-CFC refrigerants were used.

Indoor Environmental Quality

- Noise reduction ceiling materials were used in the new construction. Additional acoustical panels were installed in existing open classroom spaces.
- Low VOC paints were used.
- Classroom lights have dual switches for more user control.
- Thermostats in classrooms and administrative offices provide temperature control within a set range.
- Clerestory windows and sunshades were installed in the gymnasium, classrooms and administrative offices.
- To reduce mold, non-organic materials were used in the building skin.

Birch Elementary School

Project Architect: OZ Architecture
General Contractor: Adolfson and Peterson
Completion Date: Summer 2010

Original Facility Master Plan Budget	*$4,200,702.00*
Asbestos - Transfer From Program Reserve	$100,000.00
ADA Compliance - Transfer From Program Reserve	$250,000.00
Fire Safety - Transfer From Program Reserve	$185,000.00
Return to Surplus	($302,356.47)
Total Project Value	**$4,433,345.53**

The Birch Elementary project included three additions totaling 6,478 sq.ft. as well as significant interior remodeling. The largest addition located at the front of the school houses the new library and administrative suite. This addition made available other space on the interior of the building for new small group learning spaces, offices, Special Education classrooms, a computer classroom, custodial, storage and an ESL classroom and allowed the school to recapture use of the music room for music instruction. The available new space also was used to construct ramps to address issues of accessibility throughout the school. The accessibility/circulation issue also was addressed by organizing common programs such as library, computer room, etc. all on the middle level.

The new construction at the front of the school created an opportunity to give the school a new look and enhance security by creating more control over entry to the building. The new front door design directs visitors through the main office to sign in before entering the building.

Additional kindergarten space was constructed to provide two equitably-sized classrooms. Another notable feature of the project was the addition of walls and doors to the corridors at 3rd, 4th and 5th grade to reduce disruptive noise produced by the open classroom design. The playground was renovated with new equipment, play surfaces and a ramp to expand play activities and improve safety and accessibility. In addition, improvements were made to building systems such as fire alarms, HVAC and electrical.

Birch Elementary School

Green Building Features

Sustainable Sites

- Roof on new construction has a white coating to reflect heat.
- New exterior light fixtures are designed to reduce light pollution.
- The new entry and library were designed for community use.

Water Efficiency

- New fixtures are low flow.
- Irrigation controls were upgraded to improve efficiency.

Materials and Resources

- The design team carefully thought out reprogramming of spaces to leave intact as many of the existing walls, furniture and equipment as possible in remodeled areas.
- Where possible, existing casework and furniture were reused, and interior finishes with high recycled content were specified.

Energy and Atmosphere

- Commissioning was performed on mechanical systems.
- Insulation in the exterior envelope of new areas exceeds standards.
- More efficient lighting fixtures were installed in many areas. Occupancy sensors were installed on new fixtures.

Indoor Environmental Quality

- Within the existing building, new walls and doors were built to enclose open classrooms.
- New ventilation was installed in 60% of the existing building.
- All paints and finish materials specified have low to no VOCs.
- Individual thermostats were installed in each remodeled classroom space.
- The design of the new addition maximized clerestory lighting for corridors and the library.
- To prevent mold, the new addition follows industry standards to keep water out.

Boulder High School

Project Architect: Klipp Architects
General Contractor: Pinkard Construction
Completion Date: Summer 2009

Original Facility Master Plan Budget	*$ 11,812,819.00*
Asbestos/Fire Electrical System - Transfer From Program Reserve	$420,000.00
Asbestos - Counseling Office - Transfer From Program Reserve	$15,000.00
To Meet Scope - transfer from Program Reserve	$228,559.48
IT Switches - Transfer from Program Reserve	$15,500.00
Total Project Value	**$12,491,878.48**

The Boulder High School project included the construction of a new 26,500 sq. ft. addition which included the new main gym, a locker room, entry lobby and support spaces. A 1,720 sq. ft. stagecraft addition was constructed on the auditorium to provide much needed space for set construction and staging. Renovations were made in the Family and Consumer Studies, Special Education and Science labs. A 1,200 sq. ft. visitors' locker room was constructed at Recht Field. The administration and counseling offices were enlarged and renovated. Some restrooms were upgraded as well as the electrical and fire detection systems.

The Board of Education approved a change of scope for the project, eliminating the construction of a bridge across Boulder Creek due to cost.

Green Building Features

Sustainable Sites

- Updated and provided additional bike racks
- Reduced onsite parking by 27 spaces

Water Efficiency

- All new fixtures installed are low flow

Boulder High School

Materials and Resources

- Recycled 50 % of onsite construction waste
- Used carpet with recycled content
- Reused 65 % of the stone removed during demolition; the remainder of the stone needed for the exterior veneer was acquired from a local source.

Energy and Atmosphere

- Installed high efficiency motors in HVAC systems
- Installed energy efficient lighting throughout and highly efficient T-5 lighting in the gym
- Installed motion sensors for lighting
- Used high performance glazing on windows which reduces glare and heat gain

Indoor Environmental Quality

- Used low-emitting paints and adhesives
- Installed thermostats that allow users thermal control within a set range

Boulder Prep High School

Completion Date: Fall 2008
Budget: $400,000

Boulder Prep High School's portion of the Bond proceeds was used to acquire a 2,500 sq. ft. facility in Gunbarrel. This is a District-owned building.

Broomfield Heights Middle School

Project Architect: LKA
General Contractor: FCI Construction
Completion Date: Summer 2010

Original Facility Master Plan Budget	*$3,703,102.00*
Fire Safety - Transfer from program Reserve	$145,000.00
To Meet Scope - Transfer from Program Reserve	$85,000.00
Surplus Funds - Approved by BOE 4/26/12	$778,667.95
Total Project Value	**$4,711,769.95**

The Broomfield Heights Middle School project included the construction of a new main office as well as expansion of the art and music rooms to meet District standards. The administration area was remodeled to provide a better customer interface for parents and students while increasing security for the school. Visitors now enter through the office and new security door controls (fob/card readers) were installed.

The library was expanded to make it easier to supervise and more useable for large groups. The cafetorium renovation was funded through an allocation of Surplus Funds and expanded the room and leveled the floor to increase seating and make the space safer and more accessible. The room is better for school performances with a larger stage, new control booth and upgraded sound systems. Seating and hard surfaces were constructed outside at the rear of the building to provide an easily-supervised student area for outside lunch and before/after school. Computer labs were upgraded with air conditioning according to District standards for better comfort and technology performance. The Special Education area was remodeled for better efficiency.

The project also included replacement of the heating boilers, replacement of select windows in the classrooms as well as improvements to the intercom and fire alarm system, exit signs, irrigation and interior signage.

Green Building Features

Sustainable Sites

- Exterior lighting is designed to reduce light pollution.

Broomfield Heights Middle School

Sustainable Sites (continued)

- Library and cafeteria remodels include features to allow for community use after hours.

Water Efficiency

- Size of irrigated landscape area was modified to reduce irrigation next to the building and moisture issues inside the building.
- Irrigation zones were retrofitted to allow better sprinkler coverage of the athletic fields and a new automated irrigation clock was installed to save water.
- New restroom fixtures are low flow and use sensor flush valves

Materials and Resources

- The remodel design made use of existing space where possible. Total square footage of new construction in the final project was reduced from the master plan scope of work.
- Materials such as casework, ceiling tiles, marker boards, screens, digital projectors, lights and brick veneer were salvaged for reuse.
- Gypsum board and concrete were locally sourced.
- The construction waste management plan had a target diversion of 50%. Metal and concrete were separated for recycling. Concrete washout spoils also were diverted from landfill.
- Vinyl wall covering, ceiling panels, carpet and linoleum contain partially recycled content.

Energy and Atmosphere

- New and remodeled spaces have occupancy sensors for lights.
- New energy-efficient condensing boilers were installed along with other system upgrades to the heating system in the building.
- New energy-efficient windows replaced old windows for about 50% of the classrooms.

Indoor Environmental Quality

- All new wall partitions were filled with acoustical blanket to minimize sound transfer between rooms.
- New roof top units were installed to improve ventilation.
- Low VOC products and materials such as paint, adhesive and tile were used to improve air quality.
- To reduce mold, mold resistant gypsum board was used in moisture prone areas. Exhaust fans were installed in toilet rooms.

Broomfield High School

Project Architect: Anderson Mason Dale Architects
General Contractor: Haselden Construction
Projected Completion: Summer 2009

Original Facility Master Plan Budget - Building	*$20,533,996.00*
IT Switches - Transfer from Program Reserve	$55,000.00
Transfer To Athletic Project To Meet Scope	($3,248.95)
Return to Surplus	($125,664.13)
Revised Facility Master Plan Budget	**$20,460,082.92**
City of Broomfield Parking Lot - Reimbursable	$237,930.00
Rebate from Xcel Energy for efficiency measures	$25,056.00
Total Project Value - Building	**$20,723,068.92**

Original Facility Master Plan Budget - Athletics	*$240,014.00*
Resurface Area D Parking - Program Reserve Transfer	$100,000.00
To Meet Scope - From Main Project	$3,248.95
Revised Facility Master Plan Budget	**$343,262.95**
City of Broomfield 8th Lane Track/Parking Lot - Reimbursable	$464,391.00
Total Project Value – Athletics	**$807,653.95**

The Broomfield High School Bond project replaced the original junior high wing with a new 53,000 sf classroom addition which houses 22 classrooms and wraps around an outdoor courtyard. Classrooms in the new wing are larger than those they replaced, including the Consumer Studies area which was also outfitted with new equipment. Larger counseling offices also were located in the new wing. In addition, many existing learning spaces were expanded and upgraded including the photography lab, Special Education, CAD lab and DaVinci lab. The project also provided an additional computer lab and a language lab.

The front entrance was located in the new wing next to the administrative offices. A new reception area next to the main entrance improves security through increased monitoring by office staff. Air-conditioning was installed building-wide and many of the restrooms were upgraded.

2009
Merit Award for Design Excellence
The American Institute of Architects

Broomfield High School

New bleachers were installed for the softball field and the stadium was connected to the municipal sewer system. The City and County of Broomfield generously contributed additional funding to the project to support the construction of an 8th lane on the running track as well as parking lot improvements.

Early in the design phase, the design advisory team held a sustainability workshop and identified as priorities very good daylighting and a courtyard with an outdoor learning component. Weidt Group performed an energy analysis to guide decisions related to choosing more efficient systems and products. In considering energy efficiency of the building, the design team was guided by the idea that it is worthwhile to spend a little more on more efficient systems and equipment with shorter payback. The project design team included LEED accredited professionals.

Green Building Features

Sustainable Sites

- Maximized open space with a two-story addition with a courtyard

Water Efficiency

- Installed low flow urinals and toilets
- Used water efficient landscaping

Materials and Resources

- Demolished parking lot asphalt was reused around portable classrooms
- Demolition waste was separated and recycled
- Installed carpet and ceiling tile with recycled content
- Used regional building materials

Energy and Atmosphere

- Installed more efficient mechanical systems
- New 81% efficient boilers will pay back in 4 years
- Installed Variable Frequency Drives (VFDs) on supply/return air fans and heating pumps which adjust according to need
- Sun shades reduce heat in the classroom
- Dimming ballasts change the lighting based on the amount of sunlight in the room
- Additional wall and roof insulation was installed
- Window glazing strategies reduce heat and glare

Broomfield High School

Indoor Environmental Quality

- Installed operable windows to allow for natural ventilation instead of mechanical
- Low VOC paints and carpet were used.
- New lighting systems allow for a high level of user control
- Design maximizes daylighting—virtually every occupied space has daylighting and views
- The design employs a south-facing roof to increase daylighting and make rooms warmer in the winter months.
- Increased lighting in the core of the building through directed daylighting features
- New thermostats allow users thermal control within a range.

Casey Middle School

Project Architect: RB+B
General Contractor: Saunders Construction
Projected Completed: Summer 2010

Original Facility Master Plan Budget	*$31,122,650.00*
Transfer from Program Reserve for USGS monument	$4775.11
Transfer from Program Reserve to meet scope	$2,452.03
Revised Facility Master Plan Budget	**$31,129,877.14**
City of Boulder EET Fund contribution for LEED	$1,800,000.00
Rebate from Xcel Energy for efficiency measures	$49,275.00
Total Project Value	**$32,979,152.14**

The Casey Middle School project consisted of the demolition of most of the original building and replacement with a new 106,458 square-foot, Leadership in Energy and Environmental Design (LEED) Platinum Certified building. The new building is anchored on the site by the south and west walls of the original structure. The decision to retain the walls was the result of a community-based process that involved school community members in the design process.

The facility design considered every element of the school and site in terms of energy efficiency, resource conservation and user comfort. Some of the big ideas employed in the design to reduce energy consumption include orienting the building along an east/west axis to maximize southern and northern exposure to make the most of passive solar heating and daylighting opportunities; high performance windows and insulation and a ground source geoexchange system for heating and cooling. Numerous windows and tubular skylights bring abundant daylight into the building, reducing lighting demand.

Take a photo tour of the new school.

The pursuit of LEED certification was made possible through collaboration with the City of Boulder and use of the City's Educational Excise Tax funds.

For a virtual tour of the school and to learn more about the LEED features, go to: http://casey.bvsd.greentouchscreen.com/

Green Building Features

Sustainable Sites

- Implemented an Erosion and Sediment Control plan
- Phase I Environmental Site Assessment (ASTM E1527-05) was conducted; Contamination possible so Phase II assessment conducted as well.

Casey Middle School

"I can't stop raving about Casey. Seriously, the redevelopment has changed the neighborhood . . . The old Casey was "under-utilized" and neglected. The new Casey is clearly at its highest and best use."

Casey Middle School neighbor

Sustainable Sites (continued)

- BVSD and the design team made the decision to keep a middle school in central Boulder; the location is easily accessed by public transportation and within walking and biking distance to residential housing.
- Bike racks and showers are provided onsite; Site is accessed by bike lanes
- Designated parking for alternative fuel vehicles and car pools; A reduced number of parking spaces were provided
- The design team worked to reduce the overall development footprint.
- A storm water management plan was implemented.
- 50 % of parking is underground to reduce hard surface area.
- A light colored roof material was used.
- Light pollution reduction strategies were used for interior and exterior lighting.
- The overall site design is intended to be very pedestrian friendly.
- The green roof reduces stormwater runoff, reduces the heat island effect, has aesthetic appeal, increases local biodiversity, serves as a teaching tool; contributes to building insulation and provides carbon absorption.
- Auditorium, gym, library and commons area are designed to allow for afterhours community use.

Water Efficiency

- Project will reduce potable water consumption for irrigation by 50% over the local baseline. Exterior water reduction features include the artificial turf field and low water use plants.
- Project will reduce water use by 43% compared to EPAct 1992. Some of the water reduction strategies include low flow toilets, urinals, showers, sinks and and kitchen appliances such as the food steamer, ice machine and dish machine.
- Stormwater runoff is reduced by the bioswale under the courtyard and the artificial turf field.

Materials and Resources

- Collection and storage areas will be placed around the building for convenient occupant recycling and composting.
- Products with high recycled content such as steel, concrete, gypsum, restroom partitions and tile were used.

Casey Middle School

Materials and Resources (continued)

- New furniture is made of 70% recycled material.
- Demolition and construction waste was recycled/diverted through on-site separation/commingling program and partnership with Resource. (53% diversion rate after demolition).
- When possible, products were produced within 500 miles.
- 50% of all permanently installed wood products are FSC certified.
- Two of the original walls were reused in the new building.
- The old gym floor was diverted from landfill and repurposed as wall covering and benches.
- The artificial turf field is made with recycled materials and requires no chemical treatments.
- Restrooms have hand dryers instead of paper towels.

Energy and Atmosphere

- Building design reduces energy use 54% compared to code.
- The new school includes an on-site photovoltaic array (26.78kW) which also creates shaded bicycle parking.
- The new school uses geo-exchange heating and cooling.
- Enhanced commissioning and post-construction measurement and verification were performed.
- BVSD bought two years of green energy to offset 35% of the electricity use.
- Occupancy sensors turn off lights when rooms are empty.
- Range vent hood in the kitchen has variable speeds vs. on/off.
- Light fixtures have variable switching.
- Green star appliances were installed in the kitchen.
- Windows throughout the building are very energy efficient. The older windows in the original walls were replaced with new, more efficient ones that are aesthetically compatible.

2010
Peak Design Award
Council of Educational Facility Planners Int.

2011
Engineering Excellence Award
American Council of Engineering Companies

2011
Engineering Excellence Merit Award
American Council of Engineering Companies

2011
2nd place Colorado Sustainable Design Award
ColoradoBiz

2011
Region's Best Overall Project
Engineering News Record

2011
Crystal Award, Education Category
American Society of Interior Designers

Beginning 2011
Green Star School

2012
Best Green Educational Facility
Colorado Green Building Guild and Boulder County Business Report

Casey Middle School

Energy and Atmosphere (continued)

- Wall insulation is continuous (no gaps) with a high R-value.

Indoor Environmental Quality

- Learning spaces were designed to meet the listed Sound Transmission Class (STC) requirements, excepting windows and to achieve minimal background noise level in classrooms of 45 dBA
- An Indoor Air Quality (IAQ) management plan was implemented during construction and prior to occupancy.
- Upon completion, building was flushed with fresh air.
- All adhesives, sealants, paint, coatings and flooring within the weather barrier meet requirements for low-emissions.
- All composite wood and agrifiber products within the weather barrier contain no urea-formaldehyde
- Most offices and learning spaces (90%) have individual lighting controls to enable adjustments to suit individual preferences.
- Adjustable thermostats and operable windows allow occupants temperature control in most spaces. Each classroom has its own ground source pump.
- Most spaces in the building have exterior views.
- Numerous tubular skylights, windows and clerestories provide natural light to interior spaces in the building.
- Classrooms are located on the north side of the building to take advantage of the no-glare, consistent daylight. Sloped ceilings direct light deeper into the room and glazing on the top portion of windows lets in a brighter spectrum of light.

Innovation and Design

- Cafeteria uses fully compostable items for food service.
- Green features have been incorporated into the curriculum.

Centaurus High School

Project Architect: CSNA Architects
General Contractor: Brown Schrepferman
Completed: Winter 2009

Original Facility Master Plan Budget - Building	*$4,769,311.00*
Transfer to Athletic Project for irrigation	($182,293.00)
Transfer To Athletic Project for asphalt	($40,000.00)
Return to Surplus	($324,988.72)
Total Project Value - Building	**$4,222,026.28**

Original Facility Master Plan Budget - Athletics	*$914,680.00*
From Centaurus Main Project for irrigation	$182,293.00
From Centaurus Main Project for asphalt	$40,000.00
Field House – transfer from Program Reserve	$400,000.00
Return to Program Reserve	($137,695.27)
Total Project Value – Athletics	**$1,399,277.73**

The Centaurus project provided the school with a 5,400 sf, two-story classroom addition which houses the Pre-Engineering Academy and classrooms. In addition, 22,000 sq. ft. of administration, counseling and special education classrooms and teachers' offices were renovated. The existing art room was remodeled into specialized spaces for 2-D and 3-D art and a kiln room. The photography dark room was remodeled to make it more easily accessible. New flooring was installed in the corridors. A new field house was constructed at the football field, as well as three new tennis courts. In addition, the running track was resurfaced. The project also included upgrades to building systems such as HVAC and fire alarms.

According to school administration, the bond project directly improved the level of instruction. The Pre-Engineering Academy addition provides students state-of-the-art technology and laboratory space that rivals any engineering college. The art room remodel provides students additional space for photography development and pottery. Without these improvements fewer students would have access to this rigorous and enriching curriculum. The addition of the field house and the tennis courts provides student-athletes the ability to access training areas on

site. These improvements have each contributed to the overall enhancement of the educational program.

Green Building Features

Materials and Resources

- Where possible, existing casework was reused.
- Existing corridor between the old and new areas of the building was maintained as were existing walls.
- Concrete and brick were locally sourced.
- 100% of existing exterior walls, floor, and roof were reused as well as 50% of interior non-structural elements.

Energy and Atmosphere

- Two primary boilers were replaced with high efficiency models
- Occupancy sensors for lighting were installed in classrooms and offices
- High efficiency lighting was installed in new areas

Indoor Environmental Quality

- Low VOC carpets were installed.
- Thermostats that allow users temperature control within a set range were installed.
- New spaces have large windows for day-lighting and outside views.

Centennial Middle School

Project Architect: H&L
General Contractor: Saunders Construction
Completion Date: Summer 2011

Original Facility Master Plan Budget -	*$7,150,842.00*
Security - Transfer from Program Reserve	$185,000.00
Return to Surplus	($286,452.56)
Total Project Value	**$7,049,389.44**

The Centennial Middle School project included the construction of a new main gym and locker rooms as well as a new art room. The administration offices, health room and counseling offices were remodeled. The front entry was redesigned to provide increased monitoring and control of the front door. Science labs and the upper corridor also were remodeled. The project also included building repairs and upgrades to building systems such as HVAC, intercom and interior signage. The irrigation was replaced on all athletic fields and higher efficiency boilers were installed. The new construction meets BVSD's technical specifications which were revised at the onset of the Bond Program to encourage a higher level of sustainability.

Coal Creek Elementary School

Project Architect: Lantz-Boggio
General Contractor: Mark Young Construction
Completion Date: Summer 2012

Original Facility Master Plan Budget -	*$3,294,226.00*
Return to Surplus	($80,602.53)
Total Project Value	**$3,213623.47**

The Coal Creek Elementary School project provided new construction totaling 4,829 sq. ft. as well as interior remodeling and upgrades to building systems. The new construction included expansion of administrative offices at the front of the school, two new classrooms on the northwest corner of the school and a new cafeteria. The kitchen, art and music rooms all were renovated and expanded into the area vacated by the cafeteria.

The playground was upgraded with new equipment and play surfaces to provide more play activities and improve safety and ADA accessibility. The project also included upgrades to building systems such as intercom, signage, ventilation, clocks and irrigation.

Green Building Features

Sustainable Sites

- Site lighting is designed to reduce light pollution.
- A larger bicycle parking area was constructed.
- A white membrane roof was installed on the new construction.

Water Efficiency

- Low flow plumbing fixtures were installed in new and remodeled areas.

Materials and Resources

- Non-CFC refrigerant equipment was used.
- Where possible, existing space was remodeled to fulfill the scope of work rather than constructing new space.
- Masonry and concrete was sourced locally.

Energy and Atmosphere

- High efficiency lighting was installed in the gym.

Coal Creek Elementary School

Energy and Atmosphere (continued)

- Occupancy sensors for lighting were installed in the corridors and classrooms.
- Very efficient wall and roof insulation were installed in new areas.
- New light fixtures in offices and classrooms are very efficient.
- New exterior lights are LED.
- New windows have glazing to reduce heat gain and glare

Indoor Environmental Quality

- Low VOC products such as paint, sealants and adhesives were used in the project.
- Numerous windows provide ample daylight to classrooms.

Columbine Elementary School

Project Architect: Bennett, Wagner & Grody/Rodwin Architecture
General Contractor: Adolfson and Peterson
Completion Date: Summer 2011

Original Facility Master Plan Budget	*$8,121,995.00*
Surplus Funds - Approved by BOE 11/10/09	$1,800,000.00
Revised Facility Master Plan Budget	**$9,921,995.00**
BVSD Real Estate Sale	$4,368,698.50
Rebate from Xcel Energy for efficiency measures	$44,400.00
Total Project Value	**$14,335,093.50**

Columbine Elementary was one of two facility rebuilds in the Bond Program. The project budget was augmented with Surplus Funds to allow for the full build-out of the facility as a four-round school. The new 68,294 sq. ft. building was designed and constructed to serve grades PK-5 in 34 grade level classrooms. The new building also features a library, gym, stage, art room, music room, computer lab and cafeteria. A learning landscape walk was included on the south edge of the property and garden beds for a Garden to Table program were constructed on the new site. Lessons about environmental stewardship and sustainability are part of the science curriculum and students experience them first-hand as they learn about the green features of the school and participate in the Green Star School program. The project design team included LEED accredited professionals and the project used LEED standards as a guideline.

Administrators report students have a strong sense of ownership for their new learning environment and keeping it clean and safe. This translates to a high level of pride in their learning within the new environment.

2011
People's Choice Award
Council of Educational Facility Planners International
Rocky Mountain Chapter

Green Building Features

Sustainable Sites

- The new school was constructed on an existing, previously developed site. Students were housed in the existing structure during construction, eliminating impacts from bussing to an alternate location.
- The design of the remodeled site enhances access for pedestrians and bikers.

"We are thankful we are getting a new school building. We are thankful for the people who are building it. They work so hard. We are excited there will be an elevator. We can have people in wheelchairs who can come to our school. There will be a second floor. We will have a good view of Boulder! We are so happy to get a new gym, cafeteria, computer lab, art room, and music room! Thank you Boulder!"

Columbine Elementary 1st Grade

Reported in the "Daily Camera" Nov. 21, 2010

Columbine Elementary School

Sustainable Sites (continued)

- The civil engineering and landscape design improved the floodplain & stormwater detention conditions and restored the natural landscape bordering the site.
- A new 2 story plan was created to maximize open space onsite and minimize the building footprint.
- A network of storm sewer pipes collects approximately 92% of the site's storm sewer runoff. The overall school site has an imperviousness of only 33%, so the onsite grass fields and swales will allow runoff to percolate into the ground. Also, a porous landscape detention basin will provide water quality to the storm runoff prior to exiting the site.
- Exterior lighting is designed to reduce light pollution. The school will employ a "lights out" program after 11 p.m.
- Library gym and cafeteria were designed with exterior entrances to accommodate community use after hours.

Water Efficiency

- Low water use plants and efficient drip and low spray irrigation with rain sensors were installed. Many mature trees were preserved.
- A walking path with native vegetation was constructed onsite.
- Low flow faucets, toilets, urinals and appliances were installed.
- Water efficiency features reduce water use to 40% below code.

Materials and Resources

- Columbine is a Green Star school and the building facilities support recycling and composting.
- All steel, paper, plastic, cardboard, concrete and masonry products were recycled throughout the project. Demolition materials from the old building were recycled.
- Furniture from the old school was dismantled and recycled.
- Products with pre- and post-consumer recycled content were used in the project.
- Brick was locally sourced.

Energy and Atmosphere

- A commissioning agent was included in design and construction. Commissioning of fundamental mechanical and electrical systems was conducted.
- Non-CFC refrigerant based equipment was installed.
- Building as designed reduces peak energy load by 42%.

Take a photo tour of the new school.

Columbine Elementary School

- On-street traffic congestion and emissions were reduced through the provision of an on-site, no-idle drop off/pick up zone.
- Building was designed on an east/west axis to make the most of passive solar benefits. Windows primarily on the north and south optimize passive solar heating and daylighting. Properly sized overhangs reduce undesired heat gain in the summer.
- Concrete slab floor creates a thermal mass.
- Building envelope was designed with high performance, continuous insulation.
- Two stories minimize the volume to surface ratio.
- Building was designed to be solar ready. A photovoltaic system was installed post construction.
- Heating, cooling and electrical systems were designed to perform 30% better than code.
- Xcel provided energy modeling to guide design of mechanical systems.

Indoor Environmental Quality

- Building was designed for superior acoustical performance. Materials used in core learning spaces reduce unwanted noise.
- All grade-level classrooms have operable windows.
- All ductwork was delivered covered and was kept covered throughout construction.
- Mechanical Units were not started up until areas were final cleaned. There was a "flush-out" period prior to occupancy.
- All materials were selected to minimize VOC's.
- Light fixtures in classrooms have dual switches for user control.
- Administrative spaces allow for user control of temperature.
- 100% of grade-level classrooms are daylit. Tubular skylights provide daylight to landlocked spaces.
- The EPA program for preventing mold was used.

Community Montessori Elementary School

Project Architect: Hutton Architecture Studio
General Contractors: Whitestone, Sun Construction, Adolfson and Peterson
Completion Date: Summer 2011

Original Facility Master Plan Budget	*$1,705,974.00*
Surplus Funds - Approved by BOE 4/27/2010	$850,000.00
Total Project Value	**$2,555,974.00**

From May 2006 when the Educational Facility Master Plan was completed to February 2010, Community Montessori's enrollment grew 70%. Also during this time period, BVSD initiated an effort to reduce socioeconomic stratification among District schools.

Because of these changes, the District had a master plan created for the campus. The cost of build out for the entire plan exceeded available funding. It was determined the best use of available resources for the maximum benefit to the school in the short term would be to move Community Schools from the Paddock campus to the Education Center and remodel the vacated offices into new learning spaces. CBOC and the Board of Education approved the allocation of surplus funds for this first phase of the master plan. The remaining work proposed in the master plan will be addressed in a future bond program.

The remodel provided the school with larger art and music classrooms, dedicated Literacy, English as a Second Language and Special Education spaces, break out space and storage. The relocation of these functions to the former Community Schools space made available other space in the building to absorb enrollment growth. The project also included upgrades to preschool classrooms, building repairs and systems upgrades.

Creekside Elementary School

Project Architect: RTA Architects
General Contractor: Adolfson and Peterson
Completion Date: Summer 2011

Original Budget	*$2,208,698.00*
Surplus - Approved by BOE 4/27/2010	$335,193.21
Asbestos - Transfer from Program Reserve	$75,000.00
Total Project Value	**$2,618,891.21**

The Creekside Elementary project included construction of 7,885 sq. ft. addition on the front of the building and renovation of adjacent space as well as other interior remodeling, playground renovations, building repairs and system upgrades.

The new administrative suite was relocated next to the main entrance and provided the school with more space for administrative offices, a more recognizable and more secure front entry, new health room, storage, conference room, reception area and work room. The new construction also expanded the space for Literacy, including a new literacy library, provided a new OT/PT lab and a new art room. Surplus Funds were allocated to the project for the art room. The funds also allowed for renovation of the cafeteria and computer lab to take advantage of space vacated by the relocation of the OT/PT lab to its new space.

Exterior doors were installed in classrooms without. The playground was renovated with new equipment and play surfaces to expand play activities and improve safety and ADA accessibility.

Green Building Features

Sustainable Sites

- Light colored roofing was installed on all new additions
- Full cut-off fixtures utilized on the exterior of the building

Water Efficiency

- The new additions are designed to be 30% more water efficient than code. New plumbing fixtures are low flow

Creekside Elementary School

Materials and Resources

- A construction management plan was created to divert at least 50% of construction waste.
- Carpet and concrete contain recycled materials.
- Masonry is locally sourced.

Energy and Atmosphere

- Mechanical systems specified for new spaces are intended to make the building 30% more efficient than code.
- New exterior walls are heavily insulated.

Indoor Environmental Quality

- Ceiling materials with high acoustic ratings were used in new classrooms and office spaces.
- Good ventilation is provided through the new air handling unit for addition and operable windows in classrooms.
- Green seal, low-VOC paints were specified.
- Dual switches in classrooms provide occupants with more control over lighting.

Crest View Elementary School

Project Architect: Eidos Architects
General Contractor: Tower One Construction
Completion Date: Fall 2008

Original Budget	*$5,892,213.00*
Return to Surplus Funds	($177,154.95)
Total Project Value	**$5,715,058.05**

The Crest View Elementary Bond project provided the school with 11,888 sq. ft of new construction as well as interior renovation, playground improvements, site and building repairs and building systems upgrades. The new construction included a new four-classroom addition, new cafeteria and kitchen and new kindergarten classrooms.

The administrative offices were remodeled and a performance platform and storage were constructed in the gym. The interior renovations also created new small group learning space.

The kindergarten and intermediate playgrounds were renovated extensively with new equipment, curbing and play surfaces to expand play activities and improve safety and accessibility. The project also provided upgrades to the HVAC system, electrical service, clocks, fire alarm system, ADA signage and intercom. Some failing roof decks were repaired and new bicycle parking was constructed.

Green Building Features

Sustainable Sites

- Installed additional bike racks
- Used aluminum metallic reflective roof on all of the new roof addition to reduce heat gain; In addition, the product does not emit strong odors when installed as built up roofs do.

Materials and Resources

- Maintained the floors, walls and roof in remodeled areas
- Some kitchen equipment was reused
- Recycled demolished concrete
- Design specified materials with recycled content where possible.

Crest View Elementary School

- Used regional materials including masonry block and brick
- Used linoleum (vs. vinyl composition tile) which is a rapidly renewable material in the new hallways and cafeteria

Energy and Atmosphere

- Equipment meets extra standard for refrigerant management, beyond code
- Installed all new windows throughout; windows are double-paned and replaced single paned windows.
- Installed motion sensors for lighting in new classrooms/spaces

Indoor Environmental Quality

- Installed individual controls for lighting
- All new rooms have exterior walls to take advantage of daylighting and views
- Enhanced acoustical performance with a structural system with internal acoustical properties between classrooms to eliminate the ceiling, additional acoustics in the cafeteria and concrete block walls to cut sound

Innovation and Design Process

- Created structural support in new cafeteria to be solar panel ready

Douglass Elementary School

Project Architect: Lantz-Boggio Architects
General Contractors: Mark Young Construction
Completion Date: Summer 2012

Original Facility Master Plan Budget - Building	*$3,422,937.00*
Irrigation - Transfer to Playgrounds/Irrigation	($280,107.72)
Playground - Transfer to Playgrounds/Irrigation	($110,762.00)
Return to Surplus	($35,189.61)
Total Project Value - Building	**$2,996,877.67**

Original Facility Master Plan Budget - Playground	*$110,762.00*
Irrigation From Main Project	$280,107.72
Total Project Value – Playground	**$390,869.72**

The Douglass Elementary School project included the construction of a new main office and entry and a new preschool classroom totaling 5,724 sq. ft. In addition, an elevator was installed and the library and other spaces were remodeled. Funding for the preschool classrooms was provided by the 2010 3A Early Childhood Education tax increase approved by voters. The playground was renovated with new equipment and play surfaces to expand play activities and improve safety and ADA accessibility. The project also included upgrades to building systems such as communications, ventilation, irrigation and electrical as well as improvements to interior finishes and signage.

Green Building Features

Sustainable Sites

- A white membrane roof was installed on the new construction.

Water Efficiency

- Low flow fixtures were installed in new areas.

Materials and Resources

- Masonry was locally sourced.

Energy and Atmosphere

- Occupancy sensors for lighting were installed in corridors and classrooms.
- New lighting in offices and classrooms is very efficient.

Douglass Elementary School

Energy and Atmosphere (continued)

- Wall and roof insulation in the new construction have high efficiency ratings.
- New exterior lighting are LED.
- New windows are glazed to reduce heat gain and glare.
- High efficiency exhaust fans were installed.

Eisenhower Elementary School

Project Architect: SLATERPAULL Architects
General Contractors: FCI Construction
Completion Date: Summer 2010

Original Facility Master Plan Budget - Building	*$3,125,645.00*
Asbestos - transfer from Program Reserve	$221,260.00
Return to Surplus	($396,458.81)
Total Project Value	**$2,950,446.19**

The Eisenhower Elementary School project provided the school with 6,464 sq. ft. of new construction for a new library and expansion of the kindergarten classrooms. In addition, the administrative offices and front entry were renovated as well as other learning spaces.

The new library was constructed on the northwest corner of the school with high ceilings and large windows. The library addition also included music room storage and gym storage with exterior access. The former library was remodeled to provide small group learning spaces and additional space for Special Education. The kindergarten addition created more teacher work space and storage space and equalized the size of the two classrooms. The administration area was expanded and remodeled to provide a staff lounge and conference room. The new reception area provides better customer interface for parents and students while increasing security for the school. Visitors now enter through the office during the day and new security door controls (fob/card readers) were installed.

Engineered wood fiber replaced pea gravel on the playground to improve safety. The project also included building repairs, a new fire sprinkler system and upgrades to systems such as fire alarms, electrical equipment and communications.

Green Building Features

Sustainable Sites

- New exterior lights have full cut-off to reduce light pollution.
- The library has a separate entrance for afterhours use by the community.

Eisenhower Elementary School

Water Efficiency

- Low-flow plumbing fixtures were installed in the building.

Materials and Resources

- Over 12,000sf of existing space was renovated. The administration area was made more efficient and the administration addition was avoided.
- Some of the furniture that was removed from renovated areas was donated.
- Salvaged ceiling tiles were reused.
- Some materials contain recycled content including metal framing, wall tile, floor tile, gypsum board, ceiling tile and carpet.
- Concrete and masonry were purchased locally.

Energy and Atmosphere

- Non-CFC refrigerant was specified in new equipment.
- High performance glazing was used to reduce heat gain on windows
- Energy efficient lighting with occupancy sensors were installed in the new construction.
- Energy efficient HVAC units with premium efficiency motors were installed.
- HID lights were replaced with more efficient high bay T-8s,
- Incandescent light fixtures were replaced with compact fluorescent lighting.
- Structural and space considerations were made to allow for future installation of solar panels.

Indoor Environmental Quality

- To reduce unwanted noise, walls between educational spaces were constructed to the roof deck. In addition, walls are insulated and acoustical ceiling tile was installed.
- Low VOC products were used, including adhesives, sealants, paints, coatings and floorings and wall systems.
- Multi-level lighting controls provide greater occupant control.
- Large windows in the library provide daylighting and views.

Eldorado K-8 School

Project Architect: RTA Architects
General Contractors: Golden Triangle Construction
Completion Date: Summer 2011

Original Facility Master Plan Budget	*$1,069,861.00*
To meet scope - transfer from Program Reserve	$6,253.47
Total Project Value	**$1,076,114.47**

The Eldorado K-8 School project included the construction of a new 3,097 sq. ft. two-story, 5-room wing. The new space provides small group instructional space for ESL and Special Education students and easy access from the general education classrooms. These classes were previously located outside the building in portable classrooms. Teachers benefit from quick and easy access to their materials in the main building.

In addition, the existing parking lot was reconstructed for kindergarten drop off. The choir room was renovated and enlarged to accommodate larger classes. Renovations were made to improve ventilation and acoustics in the gym. New equipment and play surfaces were installed on the playground to offer more play activities and improve safety and ADA accessibility.

Green Building Features

Sustainable Sites

- Two story addition reduced footprint of new construction.
- Light colored roofing was installed on the new addition.
- Full cut-off light fixtures were installed on exterior of the addition.

Water Efficiency

- New addition was designed to be 30% more efficient than code.
- New plumbing fixtures are low-flow.

Materials and Resources

- A construction waste management plan was created to divert at least 50% of construction waste.
- Carpet and concrete contained recycled materials.

Eldorado K-8 School

Energy and Atmosphere

- The addition was designed to be solar ready.

Indoor Environmental Quality

- High NRC ceiling materials utilized in new classrooms, classrooms walls were designed to meet the LEED for schools NRC requirements.
- Green seal, low-VOC paints were specified.
- Dual-switch lighting in classrooms allows for more occupant control.
- Large windows in new classrooms maximize views and daylighting.

Emerald Elementary School

Project Architect: OZ Architects
General Contractor: Adolfson & Peterson Construction
Completion Date: Summer 2010

Original Facility Master Plan Budget	*$3,201,265.00*
Asbestos - transfer from Program Reserve	$100,000.00
Return to Surplus	($239,200.30)
Total Project Value	**$3,062,064.70**

The Emerald Elementary School project consisted of two additions and significant interior remodeling. A new 6500 sq. ft. main gym was constructed on the north side of the school. The old gym and cafeteria located in the center of the school were renovated into a new cafeteria/multipurpose room, storage and learning spaces for TAG and ESL. The bleachers were retained in this room to allow for it to be used as a performance space. The former TAG and ESL spaces across the hall were converted into a computer lab. The renovation improves circulation in the school by creating a north/south central corridor and eliminating the need to pass through the cafeteria to travel from one academic wing to the other. A new small group learning space was provided in the gym.

The reception area of the main office was renovated and a small entry vestibule was constructed to provide increased security and monitoring of the front door. The playground was renovated with new equipment, curbing and surface material to offer more play activities and improve safety and ADA accessibility. A 10,000 sf play court was constructed onsite along with a new exercise path. The project also included asbestos removal and a complete electrical system upgrade.

Green Building Features

Sustainable Sites

- Gym addition was thoughtfully placed to minimize the footprint of the building and have small impact on the existing building systems.
- New exterior lights are designed to reduce light pollution.
- The new gym is designed for community use after hours.
- Light colored materials were used on the addition. Hard play surfaces were reduced and soft surfaces and sod were increased.

Emerald Elementary School

Water Efficiency

- Low flow and efficient plumbing fixtures were installed.
- Irrigation controls were upgraded to improve efficiency.

Materials and Resources

- 100% of the existing building was left intact. Interior spaces were remodeled to improve functionality, circulation and acoustical performance.
- Where possible, existing casework and furniture were reused.
- Interior finishes with high recycled content were specified.

Energy and Atmosphere

- Commissioning was performed on new and remodeled mechanical systems.
- Insulation in new areas exceeds standards.

Indoor Environmental Quality

- In remodeled instructional spaces, new walls were built up to structure to reduce unwanted noise from corridors.
- The new gym location was selected to allow for separation from instructional areas.
- All paints and finish materials specified have low to no VOCs.
- Individual thermostats were installed in remodeled spaces.
- Clerestory windows were installed in the gym to provide natural daylight and reduce the need for electric lights.
- Tubular skylights were installed in areas without windows to provide natural daylight and reduce the need for electric lights.

Students celebrate the completion of construction with a ribbon cutting ceremony.

Escuela Bilingüe Pioneer

Project Architect: H+L Architects
General Contractors: W.O. Danielson
Completion Date: Summer 2011

Original Facility Master Plan Budget	*$4,605,385.00*
HVAC - transfer From Program Reserve	$50,322.73
Solatubes, Portable, Computer lab – Transfer from Program Reserve	$70,000.00
Total Project Value	**$4,725,707.73**

The Escuela Bilingüe Pioneer project included the construction of new administrative offices and kindergarten rooms totaling 9,346 sq. ft., as well as extensive interior remodeling that upgraded the preschool rooms, the computer lab, the cafeteria and third grade classrooms. The playground was renovated with new equipment, curbing and surface material. The project also included boiler replacement, roof repair, site improvements and upgrades to building systems such as electrical and interior signage.

Green Building Features

Water Efficiency

- Low flow plumbing fixtures were installed.
- Water efficient landscaping was installed.

Materials and Resources

- Construction waste and demolished materials were recycled.
- New carpet has recycled content.

Energy and Atmosphere

- New lighting is energy efficient and has occupancy sensors to turn off lights when not in use.
- New windows have low-e glass.
- South facing glass is shaded with an overhang.
- The new addition is designed to be solar-ready.

Indoor Environmental Quality

- Low emitting adhesives, sealants and paints were used.
- Tubular skylights were installed in interior classrooms to provide natural light.

Fairview High School

Project Architect: RTA, Inc.
General Contractor: Golden Triangle
Projected Completion: Summer 2010

Original Facility Master Plan Budget - Building	*$10,056,974.00*
Transfer from Fairview Athletic Project	$110,564.70
Return to Surplus	($105,082.98)
Total Project Value - Building	**$10,062,455.72**

The Fairview High School project included construction of a 7,615 five-classroom wing on the World Languages/Social Studies level, as well as interior remodeling, improvements to athletic facilities, building repairs and systems upgrades.

The main office and front entry were renovated to provide the school with more space for administrative offices and create a more recognizable and more secure front entry. During the school day, visitors are directed through the reception area to check in before entering the school. The senior balcony was remodeled into administrative offices and Post-Graduate Center. The 700 level (physical education and locker rooms) was completely renovated to provide co-ed access to teachers and coaches, sports team meeting areas, an enlarged training room, changing area for coaches and officials, while maintaining health classroom space.

The space formerly occupied by Teen Parenting was renovated into flex learning space, a large amphitheater-style classroom and a business curriculum computer lab. Also on the 300 level, the Consumer and Family Studies lab was remodeled as well as the computer aided design (CAD) lab. The custodial space and restrooms also were upgraded.

A new field house was constructed and the softball field was upgraded with new infield mix, wind screen, bleachers and electrical service. Also included in the project were upgrades to boilers, the HVAC system, the communication system and interior signage.

Fairview High School

Green Building Features

Water Efficiency

- Remodeled some bathrooms, and replaced all fixtures with low flow toilets and urinals
- Design uses native grasses instead of sod on 1/5 of the original turf grass

Materials and Resources

- Existing structure was reused where possible in the renovation to reduce demolition waste.
- Reused lockers
- Used carpet and ceiling tiles with recycled content
- Used some regional materials

Energy and Atmosphere

- Replaced existing boilers with high efficiency condensing boilers
- Economizers on the new rooftop units provide cooling from outside air
- Used motion sensors for lighting
- Used dimming ballasts, which change the lighting based on the amount of sunlight in the room

Indoor Environmental Quality

- Used low-emitting paint
- Installed operable windows
- Installed Solatubes in the addition
- Used sloped ceilings in the classrooms to bounce light deeper into the room
- Used light shelves to bring light inside

Fireside Elementary School

Project Architect: Larson Incitti Architects
General Contractors: Bassett and Associates
Completion Date: Winter 2011

Original Facility Master Plan Budget - Building	*$1,112,961.00*
Transfer from Program Reserve to meet scope	$144947.98
Total Project Value	**$1,257,908.98**

The Fireside Elementary School project included the construction of new classrooms totaling 1,293 sq. ft. as well as renovation of the main office, and preschool, kindergarten and kindergarten enrichment classrooms. One portable classroom structure was removed from the site. The playground was upgraded with new equipment, curbing and play surfaces to provide additional play activities and improve safety and ADA access. The project also upgraded building systems such as intercom, ventilation, irrigation and interior signage.

Green Building Features

Sustainable Sites

- Exterior lights were only added where required, and were not located facing the neighboring community.

Water Efficiency

- Low flow plumbing fixtures were installed in renovated areas.

Materials and Resources

- Flooring contains recycled content.
- New doors contain certified wood.

Energy and Atmosphere

- New additions are solar ready.

Indoor Environmental Quality

- Low VOC paints and adhesives were used.
- Lighting has multiple settings and occupancy sensors.
- Main office has thermostats for user control of temperature
- New ceilings were constructed with acoustic tile, and sound attenuating blanket was installed in walls and above the ceiling.

Flatirons Elementary School

Project Architect: Larson Incitti Architects
General Contractors: Golden Triangle
Completion Date: Summer 2009

Original Facility Master Plan Budget	*$4,203,473.00*
To Meet Scope - Transfer from Program Reserve	$24,048.58
Asbestos - Transfer from Program Reserve	$230,000.00
Total Project Value	**$4,457,521.58**

The Flatirons Elementary School project included new construction totaling 10,321 sq. ft., interior renovations, building systems upgrades and playground renovations.

A new gym with a performance space, music room kitchen and flex space were constructed on the northeast corner of the school. The old gym was remodeled into a new cafeteria. The school administration offices were relocated to the main entrance of the school to make it easier to access and increase security by allowing office staff to monitor the front door. The former administrative space was remodeled into a computer lab and the art room was renovated.

The playground was upgraded with new equipment, curbing and surface material to provide additional play activities and improve safety and ADA accessibility. The project also included upgrades to building systems such as intercom, electrical and HVAC.

Green Building Features

Sustainable Sites

- The new addition is located so as not to block views or daylighting in classrooms.
- Runoff was directed to landscaped areas wherever possible to allow for natural stormwater filtration and groundwater recharge.
- Hardscape areas are kept to a minimum while existing softscape areas are preserved.
- Exterior lighting is kept to a minimum required by code and a light pollution study was performed during design.
- The gym is designed for after-hours community use.

Flatirons Elementary School

Water Efficiency

- Low flow fixtures were installed in new construction.

Materials and Resources

- The project included a designated space for recycling.
- Where possible, the project renovated existing space rather than constructing new.
- Where possible, products containing recycled materials were used.

Energy and Atmosphere

- Occupancy lighting sensors and efficient lighting were installed in new spaces.
- New mechanical equipment is high efficiency and exceeds State requirements.
- New gym roof is designed to support the future installation of solar panels.

Indoor Environmental Quality

- Acoustical ceiling, wall panels and carpet were used to improve reduce unwanted noise.
- Operable exterior windows were installed to improve outdoor air ventilation.
- Low VOC products were utilized whenever possible.
- Dual level switching to allow more user control of light fixtures was provided in the administration area, art room, computer lab and gymnasium.
- Thermostat controls allow for user control within a set range.
- The new addition has numerous exterior windows to provide natural daylight.
- All exterior walls subject to moisture exposure are designed to ventilate to prevent mold.

Foothill Elementary School

Project Architect: Larson Incitti
General Contractor: Haselden Construction
Projected Completion: Summer 2009

Original Facility Master Plan Budget	*$9,051,405.00*
To Meet Scope - Transfer from Program Reserve	$95,468.36
Asbestos - transfer from Program Reserve	$50,000.00
HVAC - Transfer from Program Reserve	$115,500.00
Return to Surplus	($8,443.87)
Total Project Value	**$9,303,929.49**

The Foothill Elementary project included new construction totaling 18,886 sq. ft. as well as interior renovation and upgrades to building systems. A new wing was constructed on the east end of the building which houses classrooms, the library, computer room and work rooms. The vacated space was converted into ESL and TAG classrooms, a teacher work room and the art room. The new location for the art room allows for direct access to the center courtyard, creating an opportunity for an art patio and outdoor learning space. The former art room space was remodeled into a teacher's lounge. The space vacated by the classrooms which were moved to the new wing was converted to meet the needs of the Special Education program.

In addition, the project enlarged and remodeled the main office which includes two conference rooms, new health clinic, reception area, offices and staff work room. The new entry is more recognizable to visitors and increases security with increased visibility of the front door. The existing kindergarten classrooms were expanded and remodeled. The cafeteria was enlarged and a new kitchen was constructed adjacent to it. The playground was upgraded with new equipment and surface material to offer more play activities and increase safety. The drop off/pick up lane was renovated to increase safety and efficiency. The boiler was replaced and repairs were made to the roof. Building systems such as HVAC, electrical service, fire alarm, site irrigation, building-wide sprinkler system and interior signage were upgraded.

Foothill Elementary School

Green Building Features

Water Efficiency

- All new fixtures installed are low flow

Materials and Resources

- Trees removed from the site went to neighbor for firewood.
- Playground equipment removed from the site was donated to another BVSD elementary school.
- Used materials with recycled content such as masonry, roof and building insulation, concrete, tile, gypsum, carpet, metal toilet partitions and steel parts and pieces
- Used regional building materials such as brick, fly ash for concrete, mortar, cement, sand and steel joists

Energy and Atmosphere

- Installed high efficiency boiler
- Installed energy efficient lighting
- Installed motion sensors for lighting
- Surpassed State envelope requirements by 33% using high efficiency roof and wall insulation
- High efficiency glazing on windows
- Created infrastructure for school to be solar ready

Indoor Environmental Quality

- Increased ventilation by upgrading and installing additional unit ventilators
- Used low-emitting sealants and paints
- Used green seal certified carpet
- Installed formaldehyde free case work
- Installed thermostats that allow users thermal control within a set range
- All new classrooms have daylighting and views

Gold Hill Elementary School

Engineers: JCN Engineering, Cave Consulting
Contractor: Alpine Roofing, Bassett & Associates
Project Budget: $174,910
Playground Budget: $18,787
Completion Date: Summer 2010

The Gold Hill project included renovations to the playground, classroom and library/lunch room as well as the following work:

- Electrical service improvements
- Clock systems improvements
- Roof replacement
- Interior finishes upgraded (i.e. ceiling tiles, carpet, wall finishes, etc.)
- Paint exterior
- Replace existing propane furnaces

Halcyon Middle School

Project Architect: Hutton Architects
General Contractor: Quinlan Construction
Completion Date: Summer 2011

Original Facility Master Plan Budget	*$ -*
Interest Earnings - Approved by BOE 4/27/2010	$200,000.00
Design Costs and Overage - transfer from Program Reserve	$69,025.06
Revised Master Plan Budget	**$269,025.06**
Donation from IMPACT	$40,000.00
Total Project Value	**$309,025.06**

Halcyon was not included in the Educational Facilities Master Plan because, at the time, the District was planning to move to an inclusion model which would keep Halcyon students in their home schools. In the meantime, BVSD decided the students are best served in a program housed in its own facility. CBOC and the Board of Education approved the allocation of Surplus Funds to address some of the building's most critical needs until a new facility is constructed or acquired for Halcyon. The project included resolving fire code issues, providing private offices, improving circulation and access, paving the basketball court, updating finishes including carpet and paint, moving lockers and installing tubular skylights.

"I still can't tell you how INCREDIBLY AWESOME our building is, walking down the solar-tubed hallway, appreciating the warmth and freshness of our new carpet and paint, easily passing through the new cafeteria door, oh, I could go on but you get the point. The Panther Nation is forever in debt to you for taking care of our students, staff and families."

Matt Dudek, Halcyon Principal

Green Building Features

Materials and Resources

- Carpet and ceiling tile contain recycled material.
- Gypsum board was locally sourced.
- Floor tiles contain rapidly renewable material.

Energy and Atmosphere

- Occupancy sensors for lighting were installed.

Indoor Environmental Quality

- Office walls were designed for acoustic separation.
- Improvements were made to the ventilation system to increase outside air.
- Low to zero VOC finishes were used. Products were formaldehyde free.

Halcyon Middle School

Indoor Environmental Quality (continued)

- Manual lighting control was provided.
- Individual offices have thermostats that allow for user control within a range
- Tubular skylights in the main hallway provide natural light to an interior space.
- Film was applied to windows to reduce glare and heat gain.

Heatherwood Elementary School

Project Architect: SLATERPAULL Architects
General Contractor: FCI Construction
Completion Date: Summer 2010

Original Facility Master Plan Budget	*$3,615,572.00*
Asbestos - transfer from Program Reserve	$119,600.00
Return to Surplus	($443,132.97)
Revised Master Plan Budget	**$3,292,039.03**
Rebate from Xcel Energy for efficiency measures	$2,460.00
Total Project Value	**$3,294,499.00**

The Heatherwood Elementary School project provided the school with 9,043 sq. ft. of new construction for a new art room, new music room as well as new entrance and administrative offices.

Construction of a new administration area at the front of the school afforded the opportunity to create a more recognizable main entrance and reconfigure the entry to increase security. During the day, visitors are directed through the main office to check in before entering the building. In addition, new security door controls (fob/card readers) were installed.

The new art room has a kiln room and storage room, large windows and direct access to an exterior patio for outdoor art instruction.

The former administration area was remodeled into a staff lounge and workroom. Kindergarten rooms were reconfigured into two large classrooms and an office/workroom. The existing Special Education rooms were reconfigured to equalize their sizes and other spaces in the building were remodeled to support Special Education needs. A new library office was constructed and the former staff lounge was converted to storage for the library.

Engineered wood fiber replaced pea gravel on the playground to improve safety. The project also included building repairs and upgrades to systems such as electrical, irrigation and fire sprinklers.

Heatherwood Elementary School

Green Building Features

Sustainable Sites

- New exterior lights have full cut-off to reduce light pollution.

Materials and Resources

- Over 11,000sf of existing space was renovated to fulfill the scope of work instead of new construction.
- A construction waste management plan was created and more than 50% of construction and demolition waste was diverted.
- Salvaged ceiling tiles were reused where possible.
- Some materials contain recycled content including metal framing, wall tile, floor tile, gypsum board, ceiling tile and carpet.
- Concrete and masonry were locally purchased.

Energy and Atmosphere

- Non-CFC refrigerant was specified in new equipment.
- High performance glazing on new windows reduces heat gain
- Energy efficient lighting with occupancy sensors were installed in the new construction.
- Energy efficient HVAC units with premium efficiency motors were installed in new construction.
- Gym lighting was replaced with energy-efficient fluorescent fixtures.
- Incandescent light fixtures were replaced with compact fluorescent lighting.
- Structural and space considerations were made to allow for future installation of solar panels.

Indoor Environmental Quality

- To reduce unwanted noise, walls between educational spaces were constructed to the roof deck. In addition, walls are insulated and acoustical ceiling tile was installed.
- Low VOC products were used, including adhesives, sealants, paints, coatings and floorings and wall systems.
- Multi-level lighting controls provide greater occupant control and energy savings.
- Windows were included in the new music addition to provide daylighting and views of the Flatirons.

High Peaks/ Boulder Community School of Integrated Studies

Project Architect: Lantz-Boggio
General Contractor: W. O. Danielson
Completion Date: Summer 2009

Original Facility Master Plan Budget	*$7,042,039.00*
Asbestos - transfer from Program Reserve	$575,000.00
IT Switches – transfer from Program Reserve	$15,711.00
To Meet Scope - transfer from Program Reserve	$101,076.34
Total Project Value	**$7,733,826.34**

The High Peaks/BCSIS project included extensive remodeling as well as new construction. The project provided the school with a new main gym, new art and music classrooms, new fifth grade and kindergarten classrooms and extensive renovations. The playground was renovated with new equipment, curbing and surface material to offer additional play activities and improve safety and ADA accessibility. The project also included upgrades to building systems such as HVAC.

Green Building Features

Sustainable Sites

- Used a light colored membrane roof to reduce heat gain; in addition the product does not emit strong odors when installed as built-up roofs do

Water Efficiency

- All new toilets installed are low flow
- Water efficient landscaping was installed

Materials and Resources

- Recycled onsite construction waste
- Used carpet with 10 % recycled content
- Used vinyl composition tile and roofing with recycled content

High Peaks/Boulder Community School of Integrated Studies

Energy and Atmosphere

- Met the energy performance needed for LEED credit.
- High efficiency mechanical equipment with heat recovery was installed.
- Energy efficient lighting with occupancy sensors was installed.
- Design specified glass insulation with high R values

Indoor Environmental Quality

- Used low-emitting adhesives, sealants, paints and carpets
- Gym included translucent glazing panel around the upper portions to reduce or eliminate the need for lighting during the day.
- All new and renovated spaces have outside views and daylight
- Tubular skylights were installed in each remodeled classroom.
- Tried to meet enhanced acoustical performance LEED standard for the gym
- Sunshades reduce glare

Innovation and Design

- Created infrastructure for school to be solar ready. Solar panels have since been installed.

Students kick off construction with a groundbreaking ceremony.

Horizons K-8 School

Project Architect: SLATERPAULL Architects
General Contractors: Adolfson & Peterson
Completion Date: Fall 2011

Original Facility Master Plan Budget	*$2,500,000.00*
Surplus Funds - Approved by BOE 4/27/2010	$900,000.00
Total Project Value	**$3,400,000.00**

At the onset of the Horizons K-8 School Bond project, a master plan was created for the school. The master plan, in conjunction with a cost estimate, determined that the project would have to be phased due to the school's needs far exceeding available Bond funding. Phase 1 of the master plan was funded from the Bond Program with the addition of Surplus Funds authorized by CBOC and the Board of Education. The first phase included the construction of a new middle school-sized gym including a performance platform and two kindergarten classrooms. The school features a solar teaching station onsite. Phase 2 of the master plan will be constructed through a Colorado BEST Grant.

Green Building Features

Sustainable Sites

- The gym has a separate entrance for community use after hours.

Water Efficiency

- Low flow toilets, urinals and sinks were installed.

Materials and Resources

- Carpet and steel used in the project contain recycled content.
- Masonry was locally sourced.
- Brick was salvaged from the demolished classroom and used to patch the existing building.

Energy and Atmosphere

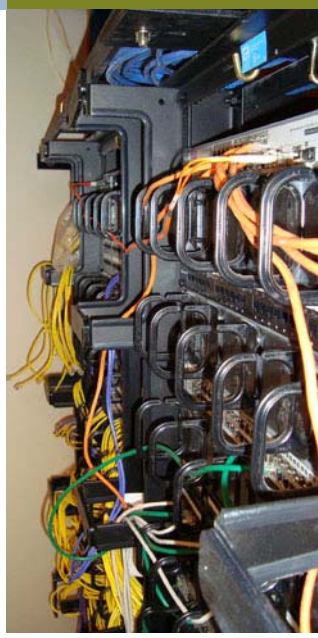
- The addition was constructed with continuous insulation.
- The addition is not air conditioned.
- The gym roof can support the future installation of PV panels.

Horizons K-8 School

Indoor Environmental Quality

- To reduce unwanted noise, walls in the new addition extend to the roof structure.
- Operable windows were installed in the new construction to provide more control over ventilation and temperature.
- Low VOC sealants and paints were used.
- New classrooms have windows on the north side for daylighting and views. Ceilings slope down into the room to further distribute light.

Information Technology



Project Designer - WAN: Adesta Design
Contractor - WAN: Sturgeon, Infrasource

Original Facility Master Plan Budget-WAN	*$10,645,125.00*
Contribution from Boulder County	$330,000.00
Total Project Value - WAN	**$11,560,791.00**

Total Project Value - LAN	***$4,758,103.00***

Total Project Value - VoIP	***$4,858,875.00***

Original Facility Master Plan Budget-Video Distribution/Digital Projectors	*$1,489,760.00*
Revenue from 2009 3A diversion	$2,900,000.00
Total Project Value - Video Distribution/Digital Projectors	**$4,389,760.00**

The Information Technology scope of work in the master plan identified four separate components:

- Upgrade the Wide Area Network (WAN) to provide capacity to support applications with high bandwidth demands
- Upgrade Local Area Networks (LAN) to provide reliable and responsive access to data and provide wireless coverage in all District buildings
- Implement Voice over Internet Protocol (VoIP) to enhance communications capabilities and reduce cost
- Install digital projector systems in classrooms. Create a video library and distribution system

Wide Area Network

The wide area network project constructed a 100-mile fiber optic network connecting all the buildings in the district and was finished 5 months ahead of schedule. The new network provides increased digital capacity and access speed to schools. The connection speed between schools and the district servers grew from 1.5 megabits per second to 10 gigabits per

second which allows for faster access to applications such as Infinite Campus as well as documents stored on central servers.

The network is designed in two rings—east and west. Data signals can reach a school from redundant paths around the ring. If there is a failure at some point in the path, data will be rerouted in the other direction. In addition, switches, routers and other parts of the system are all duplicated. If one component fails the other takes over. The system has been designed to an industry standard that strives to achieve less than 5 minutes down time per year.

Because of the increased capacity and speed, we have converted phone service district-wide to Voice over Internet Protocol (VoIP). Both voice and data are provided to and from the schools over the new network. The double ring design also allows all schools to access phone and internet service through only two connection points. Previously there were many different phone and internet connections throughout the district and each connection had its own service fee. Reducing the number of connections to just two eliminates many of those fees, saving the district thousands of dollars each year.

With the WAN project, BVSD took a non-traditional approach and purchased the materials for the network (such as fiber, conduit and hand holes) at the start of construction and stored them onsite until they were needed. Staff estimates this saved the District nearly $1,000,000 in storage fees and markup which would have been charged by the contractors. BVSD used these savings to extend the network up Boulder Canyon to include Nederland Elementary and Nederland Middle/Senior High.

Extending the network to Jamestown and Gold Hill was cost prohibitive. For those schools, the district added additional capacity, in the form of extra T1 lines from the local phone/internet carrier so they are able to take advantage of some of the new video-related offerings.

One of the notable features of the wide area network project was the use of partnerships to leverage resources and benefit multiple parties. Since the fiber optic network extends across a large geographic region, a number of local entities were interested in offering resources to help BVSD construct the network in exchange for access to it. For example, BVSD entered into agreements with the Cities of Boulder and Louisville to use nearly 15 miles of conduit that had already been installed in exchange for

fiber strands. Conduit is the tunnels through which the fiber optic network cables are run. Using existing conduit saved the district the cost of having to install it. In exchange, BVSD is allowing the cities to use some of the fiber capacity on our system. In the project overall, shared conduit amounted to nearly 20 % of the network.

In another partnership, the Colorado Department of Transportation waived a $500,000 right of way access fee along Highway 36, allowing the conduit to be installed along the most direct route rather than a longer, more circuitous and therefore more costly route. In exchange, BVSD installed two empty conduits in addition to its own for CDOT to use.

Boulder County contributed funding to the portion of the project up Boulder Canyon and in return gained fiber optic access to various county facilities in Nederland.

These collaborations resulted in cost savings for the district which were used to expand the scope of the IT improvements provided through the Bond Program. Some of these savings were used to bring IT closets in schools up to code and install air conditioning which will prolong the life of the equipment. Some of the district's other partners included: the cities of Broomfield, Lafayette, Nederland, and Longmont, the Boulder Research Administration Network, Colorado University, CBOCES, UCAR, Adams 12 School District.

Local Area Network
At each school site, upgrades were made to the local area networks to improve reliability and responsiveness, provide building-wide wireless access and VoIP phone systems.

Video Distribution/Digital Projectors
The original scope of work in the master plan called for the installation of digital video projectors in a few select classrooms in each school. In 2009, the Board of Education approved the diversion of 2009 3A dollars from computer replacement to classroom video. This allowed the District to install video projector systems, which included a Calypso learning system, projector and document camera in most classrooms in every school. A centralized video library and distribution system also was created, enabling classroom teachers to access videos and other instructional materials digitally.

Jamestown Elementary School

Engineers: JCN Engineering, Cave Consulting
Contractor: Alpine Roofing, Goddard Construction, Bassett & Assoc.
Playground equipment: Rocky Mountain Recreation
Completion Date: Summer 2010

Original Facility Master Plan Budget	*$157,279.00*
Return to Surplus	($1,923.09)
Total Project Value	**$155,355.91**

The Jamestown project included the following work:

- Electrical service improvements
- Clock systems improvements
- Roof replacement and repairs
- Interior finishes upgraded (i.e. ceiling tiles, carpet, wall finishes, etc.)
- Correct site drainage issues
- Replace interior doors

In addition, improvements were made to the playground. The project received additional funding from GOCO for these renovations.

Justice High School

Project Architect: Klipp Architects
General Contractor: Pinkard Construction
Completion Date: Summer 2009
Budget: $143,791

The Justice High School project was completed in conjunction with the improvements at Boulder High School. The visiting team room was enlarged by approximately 600 square feet to accommodate Justice High. The addition has a separate entrance and toilet facilities reserved for the school. In addition, a shed was purchased for the school.

Kohl Elementary School

Project Architect: OZ Architecture
General Contractors: Adolfson & Peterson
Completion Date: Summer 2010

Original Facility Master Plan Budget	*$3,986,949.00*
Utility Improvements - Transfer from program Reserve	$175,000.00
Asbestos - Transfer from Program Reserve	$250,000.00
Return to Surplus	($247,608.74)
Total Project Value	**$4,164,340.26**

The Kohl Elementary School project included two additions totaling 6,649 sq.ft. as well as significant interior remodeling. The new and remodeled spaces come closer to meeting the District's Educational Specifications and better support the educational program of the school.

The addition on the southeast corner of the building provided a new art room with kiln room and storage. The existing adjacent space was remodeled into a music room. This benefitted the school by moving the noisy program further from the academic area and creating a fine arts wing for the school.

The former art and music space was remodeled into a new, larger cafeteria and a new kitchen was constructed. The new cafeteria with its larger size and rectangular shape is more functional as a multipurpose space and can be used occasionally as a gym or for music practice. It is easily accessible from the exterior for community use.

Special Education was relocated to a portion of the former cafeteria space which is centrally located and to better serve the program. New small group instructional spaces were provided in the remaining space from the former cafeteria. The lobby/reception area was remodeled to provide a more secure front door and an updated more prominent entry. The former kitchen space was renovated into a faculty lounge. Corridors were renovated to improve ADA access.

Asbestos was removed throughout the building providing the opportunity to update floor finishes and ceiling tiles and lighting in some areas.

Kohl Elementary School

Upgrades were made to the HVAC and electrical systems. The playground was renovated with new equipment and surface material to offer additional play activities and improve safety and accessibility.

Green Building Features

Sustainable Sites

- The new art room was located to maximize daylighting.
- A new shade structure was installed along the east wing to reduce solar heat gain.
- New exterior light fixtures were selected to reduce light pollution.

Water Efficiency

- Low flow and efficient fixtures were installed in new and renovated areas.

Materials and Resources

- 100% of the existing building was left intact. Some spaces were remodeled and reprogrammed for other use.
- Where possible existing casework and furniture were reused.
- Interior finishes with high recycled content were specified.

Energy and Atmosphere

- The building remodel and addition were designed to improve energy efficiency with better mechanical systems and updated lighting fixtures.
- Exterior insulation in the new addition exceeds standards.
- Solar powered light fixtures were installed at the remodeled building entry.

Indoor Environmental Quality

- Walls in new instructional spaces were designed to reduce unwanted outside noise.
- All paints and finish materials specified have low to no VOCs.
- Individual thermostats were installed in each remodeled classroom space.
- Large windows were installed in the art room addition to provide natural light and reduce the need for electric lights.

Lafayette Elementary School

Project Architect: Barker Rinker Seacat
General Contractor: Mark Young Construction
Completed: Fall 2008

Original Facility Master Plan Budget	*$3,009,587.00*
To Meet Scope - Transfer from program Reserve	$112,421.96
Total Project Value	**$3,122,008.96**

The Lafayette Elementary Bond project included new construction totaling 6,992 sq ft. which provided a new four-classroom wing, multi-purpose room and additional administrative space. The administration area was expanded and remodeled to include a new clinic, reception area, conference room, offices, teachers' lounge and storage room.

The front entrance was remodeled to increase visibility and monitoring of the front door by office staff. A new fire sprinkler system was installed throughout the school. All asbestos was removed and new ceiling and floors were installed in the corridors and cafeteria. Building repairs and upgrades to building systems such as HVAC and intercom also were included in the project. The playground was upgraded with new equipment.

Green Building Features

Water Efficiency

- All new toilets installed are low flow

Materials and Resources

- Used local brick for veneer

Energy and Atmosphere

- Installed energy efficient lighting
- Installed motion sensors for lighting
- New windows have high efficiency low E glass

Lafayette Elementary School

Indoor Environmental Quality

- Increased ventilation and thermal control with operable windows in all new spaces
- Used low-emitting paints
- Utilized southern orientation to incorporate daylighting

Louisville Elementary School

Project Architect: Lantz-Boggio
General Contractors: Adolfson & Peterson
Completion Date: Summer 2010

Original Facility Master Plan Budget - Building	*$2,850,862.00*
Irrigation - Transfer to Playground/Irrigation	($103,090.00)
Playground - Transfer to Irrigation/Playground	($97,815.00)
Asbestos - Transfer from Program Reserve	$353,330.00
To Meet Scope - Transfer from Program Reserve	$34,146.83
Transfer from Playground project	$19,108.54
Total Project Value - Building	**$3,056,542.37**

Original Playground Budget	*$97,815.00*
Irrigation From Main Project	($103,090.00)
Transfer remaining balance to main project	($19,108.54)
Revised Facility Master Plan Budget - Playground	**$181,796.46**
GOCO grant	$85,000.00
Total Project Value	**$266,796.46**

The Louisville Elementary School project included construction of a two-classroom addition and a new administration suite totaling 6,016 sq. ft. The old administration was renovated into two new classrooms. Two existing classrooms were converted into preschool rooms. All asbestos was removed from the building and new carpet, ceiling and floor tiles were installed. Sound absorption materials were installed in the cafeteria. The project also included building repairs and upgrades to systems such as ventilation and electrical. The playground was renovated with new equipment and play surfaces to provide more play opportunities, improve safety and ADA accessibility. The school received a GOCO grant to augment the playground improvements. A Garden to Table planting area was constructed.

Green Building Features

Sustainable Sites

- New exterior lighting was designed to reduce light pollution

Louisville Elementary School

Materials and Resources

- Where possible, existing space was used to meet scope rather than new construction.
- Masonry was locally sourced.

Energy and Atmosphere

- Non-CFC refrigerant equipment was installed.

Indoor Environmental Quality

- Low VOC paints, sealants and adhesives were used in the construction.

Students at Louisville Elementary learn about electricity during a tour of the construction site.

Louisville Middle School

Project Architect: SLATERPAULL Architects
General Contractor: Adolfson & Peterson Construction
Projected Completion: Summer 2009

Original Facility Master Plan Budget	*$16,045,864.00*
Fire Sprinklers - Transfer From Program Reserve	$587,000.00
Return to Surplus	($417,172.37)
Revised Master Plan Budget	**$16,215,691.63**
Rebate from Xcel Energy for efficiency measures	$39,578.00
Total Project Value	**$16,255,269.00**

The Louisville Middle School project provided the school with a new 43,117 sq. ft., two-story addition to house the auditorium, music, art, applied technology and library as well as new administration and counseling offices. The new office is located near the front entry which was designed with an all glass airlock and double doors to allow for increased monitoring and control over the entry. The addition also features a new student commons area. The old library was remodeled into special education classrooms and a computer lab. Tubular skylights were installed in some existing interior classrooms so that all learning spaces now have natural light. Also included in the project were improvements to the electrical system, interior signage, irrigation and communication systems.

Green Building Features

Sustainable Sites

- New construction did not increase light pollution
- Auditorium may be used jointly by the community

Water Efficiency

- New fixtures are low flow

Materials and Resources

- Concrete floors were finished with stain instead of floor covering
- Brick was salvaged from the demolished building and reused in the new addition; other brick used in the project was regionally sourced

Louisville Middle School

Materials and Resources (continued)

- Construction waste was diverted from landfills
- Interior finish materials such as carpet, ceiling tiles and acoustic tiles have high recycled content

Energy and Atmosphere

- Boilers were replaced with high efficiency models
- Efficient fans and pumps were installed
- 85 % efficient domestic hot water heaters were installed
- Motion sensors in new rooms turn off lights when the space is empty
- New insulation is very efficient (wall = R-15, roof = R-38)
- Window glazing reduces glare and heat gain

Indoor Environmental Quality

- Low-emitting paints and sealants were used
- Classrooms have dimmable lights
- Thermostats allow users control of temperature within a set range
- Maximized daylighting with interior light shelves that bounce light into the classroom and exterior sun shades to reduce glare and heat gain
- Tubular skylights were installed in halls and classrooms
- Most new spaces have exterior views
- Acoustic insulation in classroom walls was used to create quieter teaching space
- Acoustic panels in the auditorium, music rooms and common area reduce sound transfer

Innovation and Design Process

- Old boiler covers are on display in the corridors
- School hosted a construction club during the project

Manhattan Middle School

Project Architect: OZ Architecture
General Contractor: Adolfson & Peterson Construction
Completed: Winter 2009

Original Facility Master Plan Budget	*$10,461,508.00*
Asbestos/Fire Sprinklers - Transfer From Program Reserve	$600,000.00
Return to Surplus	($270,126.59)
Total Project Value	**$10,791,381.41**

The Manhattan Middle School project provided the school with a 12,851 sq. ft of new construction including a new six-room science wing, a new band room and new administrative suite. In addition, a new dance studio was created in existing space and the auditorium and other classrooms and learning spaces were renovated. The main office and front entry were remodeled with a double door vestibule to provide greater visibility and control over the entry. The project also included building repairs and extensive upgrades to the building systems such as HVAC and electrical. Incorporating sustainable features into the design was a high priority for the design professionals and the design advisory team. A 10 kW photovoltaic array was installed on the roof of the Science wing and students are able to track the performance on a monitor inside the school.

Green Building Features

Sustainable Sites

- Reduced light pollution by capturing light in the building and aiming exterior flood lights down

Water Efficiency

- Water efficient landscaping was achieved with ditch water
- Updated irrigation lines and used the existing cistern and ditch
- Installed master irrigation controller with weather station to monitor water requirements

Materials and Resources

- Reused as much as possible including doors, frames, cabinets, ceiling tiles, lockers and 30 % of casework.

Manhattan Middle School

Materials and Resources (continued)

- Recycled steel and other metal
- Used materials with recycled content

Energy and Atmosphere

- Installed onsite renewable solar to provide power to select systems in the new Science wing. When demand is low electricity is fed back into the grid.
- Installed two solar and wind powered light poles onsite
- Installed motion sensors for lighting in all new spaces

Indoor Environmental Quality

- Used low-emitting paints, door stain and concrete floor finishes
- Installed thermostats to allow users control of temperature within a set range
- Designed for daylighting and views in 75 % of new classrooms
- Polished concrete floors utilized a certified green system with no off gassing and sustainable maintenance which does not need chemical stripping

Innovation and Design Process

- Corridor ceilings are exposed so students can see building systems making the building a learning tool
- Renewable systems have been integrated into the curriculum.

Mesa Elementary School

Project Architect: RTA Architects
General Contractor: Adolfson & Peterson
Completion Date: Summer 2010

Original Facility Master Plan Budget	*$4,303,892.00*
Asbestos - transfer From Program Reserve	$159,137.88
Total Project Value	**$4,463,029.88**

The Mesa Elementary School project included two additions totaling 9,405 sq. ft. as well as interior renovation, building repairs and upgrades to building systems.

A new wing which houses the main gym, the new art room with kiln room and storage and new grade level classrooms was constructed on the southwest corner of the existing building. The administrative offices were relocated to a new addition on the southeast corner of the school to provide better access to the parking lot and student drop-off. The new construction afforded the opportunity to create a more recognizable and more secure entrance. Visitors to the building enter through a double door air lock adjacent to the reception desk where they must check in.

The former art room was converted to a Science lab and the former administrative offices were converted to a classroom. The former main gym was repurposed as performance space and a multi-purpose room. Flex learning space, a computer lab and Literacy were relocated to other vacated spaces in the building.

New paint and new carpet were installed in various locations throughout the building. Building repairs and upgrades to building systems such as ventilation and electrical also were included.

Green Building Features

Sustainable Sites

- The new additions were located on the south façade to maximize views, passive solar heating and daylighting.
- A white roof was installed.
- New lighting had downward directed lighting

Mesa Elementary School

- The bus stop waiting/sitting area was incorporated into the design with new ADA pedestrian access from the public right-of-way to the new building entry.
- Natural preserve areas on the northwest side of the site were avoided. The nature trail was improved.
- A courtyard was incorporated into the design. New additions were designed within existing hardscaped areas, minimizing impact to adjacent open space.
- Gymnasium designed with separate entrance adjacent to public parking with access to public restrooms, secured doors designed to allow lock-off of classroom space from gymnasium.

Water Efficiency

- Low water use vegetation was used in new landscaping.
- Low flow fixtures were installed in new areas. In existing restrooms, lavatories and urinal fixtures were retrofitted with battery operated auto-flush valves.

Materials and Resources

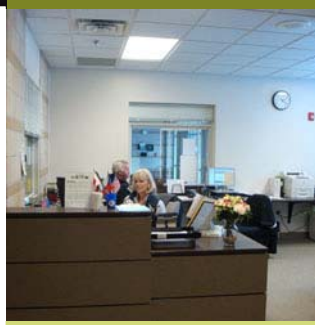
- The existing administration, art classroom and some general classrooms were repurposed into new learning spaces.
- Wood roof beams were salvaged and made into benches.
- Masonry, concrete, glass and insulation were locally sourced.

Energy and Atmosphere

- Basic system third party commissioning was performed.
- New construction features continuous insulation.
- Windows have high performance glazing.
- Low angled roofs on the new construction would be compatible with future solar panel installation.

Indoor Environmental Quality

- Low VOC paints were used in the project.
- Classrooms have dual level light switches for more user control.
- Classrooms and the administrative offices have thermostats that provide occupants with temperature control within a set range.
- For more daylighting, the gym and entrance lobby were designed with clerestories with sunshades to reduce glare.
- Non-organic materials were used at the building skin to prevent mold.



Monarch High School

Project Architect: Larson Incitti
General Contractor: Bassett Associates
Completion Date: Fall 2011

Original Facility Master Plan Budget - Building	*$2,391,162.00*
Athletics - Transfer to Athletics Project	($340,140.00)
Security - Transfer From Program Reserve	$200,000.00
Total Project Value - Building	**$2,251,022.00**

*Original Facility Master Plan Budget – Athletics**	-
Athletics - Transfer from Building Project	$340,140.00
To Meet Scope - Transfer From Program Reserve	$400,869.91
Total Project Value - Athletics	**$741,009.01**

*Athletic project was not budgeted separately in the original Facility Master Plan

The Monarch High School project included renovation of the main office and relocation of the attendance office to provide more visual control over the entrance. A new two-story four classroom addition was constructed and the cafeteria was enlarged. Athletic facilities were renovated with new restrooms, new utilities and resurfacing of the track.

Green Building Features

Materials and Resources

- Where possible, existing space was used to fulfill the scope of work.
- Flooring contains recycled content
- New doors contain certified wood

Energy and Atmosphere

- New additions are solar ready

Indoor Environmental Quality

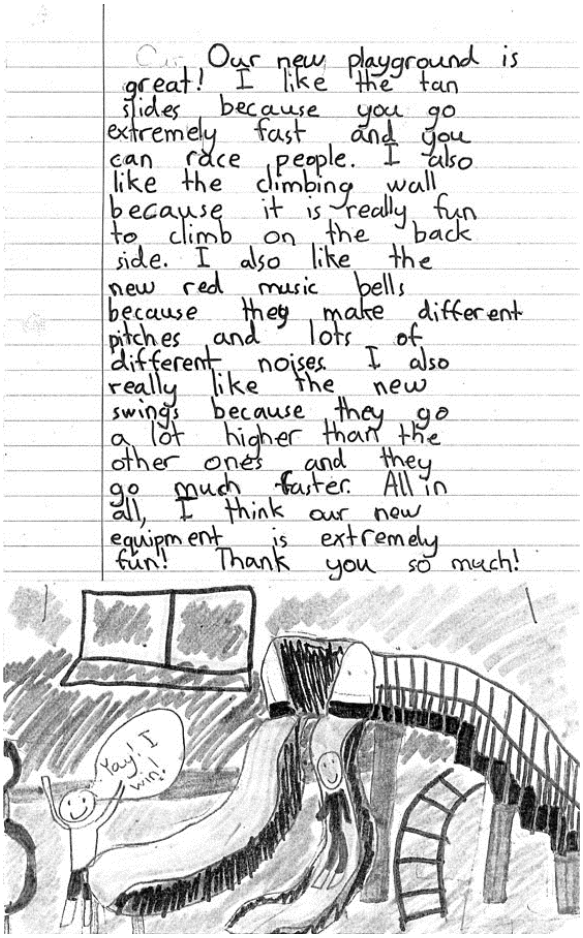
- New ceilings were constructed with acoustic tile and sound attenuating blanket was installed in walls and above the ceiling.
- Low VOC paints and adhesives were used.
- Lighting has multiple settings.

Monarch K-8 School

Project Architect: Design Concepts, Larson Incitti
Contractor: American Civil Construction, Bassett Associates
Completion Date: Spring 2012

Original Facility Master Plan Budget	*$452,375.00*
Transfer from Program Reserve to meet scope	+$12,735.84
Total Project Value	**$465,111.49**

The Bond project at Monarch K-8 provided the school with an additional play field. The playground was renovated with new equipment, new play surfaces, concrete curbs, fence and windscreen to improve play activities, safety and handicap access. Relief air dampers in penthouses were replaced.



By Ryder
Monarch K-8 3rd grade 2010

Nederland Elementary School

Project Designer: JLB Engineer Consultants
Contractor: Designscapes
Completion Date: Fall 2009

Original Facility Master Plan Budget	*$988,466.00*
Return to surplus	($61,002.86)
Total Project Value	**$927,463.14**

The Nederland Elementary School project included renovation of the parking lot and playground. New play equipment was installed on the playground. A shade structure over the preschool play area supports a photovoltaic array. Data from the array is displayed on a screen inside the building. The parking lot was reconfigured to improve safety for pick-up and drop-off.

Nederland Middle/Senior High School

Project Architect: MOA Architects, Davis Partnership (field)
General Contractors: Bassett Associates, Hall Irwin (field)
Completion Date: Spring 2011

Original Facility Master Plan Budget - Building	*$5,546,645.00*
Athletics - Transfer to Athletics Project	($1,971,246.46)
To Meet Scope - Transfer From Program Reserve	$142,027.54
Total Project Value - Building	**$3,717,426.08**

*Original Facility Master Plan Budget – Athletics**	-
Athletics - Transfer from Building Project	$1,971,246.46
Total Project Value - Athletics	**$1,971,246.46**

*Athletic project was not budgeted separately in the original Facility Master Plan

The Nederland Middle/Sr. High School project included the construction of a new administrative suite while existing space was remodeled into a science lab and multi-purpose room. Athletic facilities were upgraded with a new synthetic field, all-weather running track, a new concessions/restroom/storage building and new utilities.

Green Building Features

Sustainable Sites

- Additional bike racks were installed.

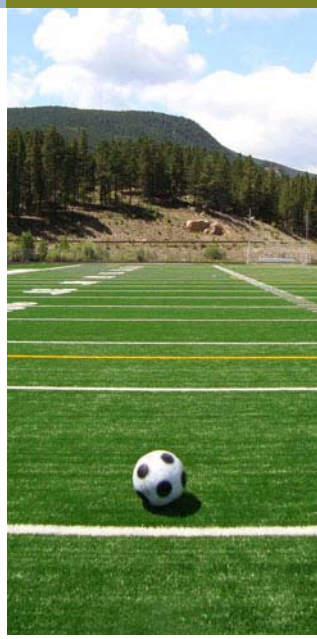
Water Efficiency

- The synthetic athletic field reduces water consumption compared to natural grass.

Materials and Resources

- Rather than building an addition, existing space was remodeled for a new science lab and multi-purpose room.

Nederland Middle/Senior High School



Energy and Atmosphere

- Existing boilers were replaced with more efficient models.
- A wind turbine was installed.

Indoor Environmental Quality

- New air handling units and ductwork were installed throughout the school to improve air circulation and efficiency.
- Windows were installed in individual offices in the administration addition and science room. The multi-purpose room has a clerestory.
- Low-emitting materials such as carpet, paint, sealants and adhesives were used.

New Vista High School

Project Architect: H+L Architects
General Contractors: Saunders Construction
Completion Date: Winter 2012

Original Facility Master Plan Budget	*$4,098,081.00*
To meet scope - transfer From Program Reserve	$484,267.67
ADA/Elevator – Transfer from Program Reserve	$360,000.00
Electrical Feeder – Transfer from Program Reserve	$50,000.00
Surplus Funds – Approved by BOE 4/27/2010	$200,000.00
Total Project Value	**$5,192,348.67**

The New Vista High School project included construction of a new entry plaza, installation of an elevator and extensive remodeling of interior spaces including the main office, computer labs, cafeteria, kitchen, new counseling suite, conference rooms, student study center and science classroom. Funding for the kitchen remodel was provided with Bond Surplus Funds to allow the school to begin serving meals onsite. Building repairs and upgrades to building systems such as HVAC, irrigation and communications also were part of the project.

Green Building Features

Sustainable Sites

- Light colored concrete was used in the remodel of the entry plaza.
- New exterior lighting was designed to minimize light pollution.
- Access to the gym was modified to provide for better afterhours access to support community use.

Water Efficiency

- Low flow fixtures were installed in remodeled restrooms.
- Significant improvements were made to the irrigation system to improve efficiency, including centralized controls.
- Occupancy sensors were installed on all new lighting.

Materials and Resources

- Where possible, existing space was reused to meet scope rather than torn down for new construction. 95 % of the project is remodel.
- Existing brick was salvaged and reused.
- Brick and concrete were locally sourced.

New Vista High School

Energy and Atmosphere

- All new lighting is more efficient than code.

Indoor Environmental Quality

- The new main office is daylit from the remodeled front lobby.

Peak to Peak K-12 Charter School

Project Architect: SLATERPAULL
General Contractor: Quinlan
Completion Date: Winter 2008
Budget: $1,600,000

Through the Bond Program, Peak to Peak K-12 Charter School received a new library. Because of legal requirements on debt obligations held by the school, the project was funded from Capital Reserve and Bond funds were used to complete Capital Reserve projects.

Platt Middle School

Project Architect: RB+B Architects
General Contractors: Adolfson & Peterson
Completion Date: Summer 2011

Original Facility Master Plan Budget	*$8,120,792.00*
Asbsetos/Fire Sprinklers - transfer from Program Reserve	$300,000.00
To meet scope - transfer from Program Reserve	$2,994.34
Total Project Value	**$8,423,786.34**

The Platt Middle School project included new construction totaling 6,406 sq. ft. as well as interior renovation and upgrades to building systems. A new administrative suite was constructed on the northwest corner of the school and the main entrance was relocated here. The new entry is designed to be more obvious to visitors and to increase security. The front door is very visible to office staff and visitors are directed through the main office to sign in during the school day. The former office spaces were converted to Special Education and team rooms for each grade. New band, orchestra and choir rooms were constructed to meet educational specifications. Existing space was remodeled into a new music library and computer music room. The art room was relocated to a larger space and Science classrooms were renovated and modernized. Improvements were made to the auxiliary gym. Windows on the library were replaced with more efficient ones and a number of building systems were upgraded such as intercom, clocks, HVAC and electrical. LEED standards served as guiding principles in the design.

Green Building Features

Sustainable Sites

- Consideration was given to maximizing open space onsite in determining the location of the new classrooms.
- To reduce heat gain, a white roof was installed on both additions. Concrete was used instead of asphalt and shade vegetation was planted onsite.
- Exterior lighting was designed to reduce light pollution.

Platt Middle School

Water Efficiency

- All new plantings on the site are species with low water requirements.
- A new irrigation control system will adjust in response to local weather conditions.
- Low flow plumbing fixtures were installed in all new construction.

Materials and Resources

- Construction waste was sorted for recycling. The construction waste management plan targeted 25% diversion.
- Where possible, existing space was remodeled to fulfill the project scope rather than new construction.
- Landscape materials and brick were salvaged for reuse.
- Many products include recycled content, such as carpet backing, floor and wall tile and acoustical panels.
- Concrete and masonry materials were locally sourced.

Energy and Atmosphere

- Commissioning was performed on new building systems.
- Cooling systems installed in the administration area are much more efficient than code requirements.
- Windows have high performance glazing to reduce heat gain. Aluminum window frames have a neoprene layer to reduce thermal conductivity.
- Walls are constructed using foamed in place insulation to minimize thermal breaks.
- Lighting is very efficient with occupancy sensors and multiple level switching.
- The new mechanical system is very efficient. Digital controls replaced a pneumatic control system. The new system is controlled centrally and allows for location specific control within the building.
- New additions are solar ready.

Indoor Environmental Quality

- New acoustical ceiling tiles and carpet were installed in many existing classrooms. Acoustical insulation, extra gypsum and acoustic sealant were installed in acoustically rated walls. Acoustic treatments were applied to walls to separate loud spaces from quiet spaces.
- Mechanical ventilation units can be set to 100% outside air.
- The project followed an Indoor Air Quality Management Plan.
- Low-emitting paints, carpet and casework were used in the project.
- Roller shades and multi-level switches give occupants control over light levels.
- Thermostats provide occupants control over temperature within a set range.

Platt Middle School

Indoor Environmental Quality (continued)

- New spaces have windows for daylighting and views. New windows were cut into remodeled spaces. Open floor plan in the administrative addition allows for maximum daylight penetration.
- Mold resistant gypsum board was used where applicable. Cavity walls were built utilizing flashing and an air space to eliminate water intrusion. Thermal breaks were examined to minimize condensate buildup.

Ryan Elementary School

Project Architect: RB+B Architects
General Contractors: Golden Triangle
Completion Date: Summer 2011

Original Facility Master Plan Budget- Building	*$3,616,816.00*
Transfer to Irrigation/Playground Budget	($276,362.00)
Return to Surplus	($406,395.87)
Total Project Value - Building	**$2,934,058.13**

*Original Facility Master Plan Budget – Playground**	-
Transfer from Building Project	$276,362.00
Basketball court, gateway arch and irrigation - Transfer from Program Reserve	$64,000.00
Total Project Value - Playground	**$340,362.00**

*Playground was not budgeted separately in the original Facility Master Plan.

The Ryan Elementary School project consisted of 5,736 sq. ft. of new construction which provided three new classrooms, an art room with a kiln room and storage, flex space and expanded administrative space. Within the existing space, a number of rooms were repurposed and moderately renovated to fulfill the school's need for additional Special Education and small group space. Storage was added to the music room and the room next door was repurposed for music instruction. The cafeteria and kitchen were enlarged and upgraded with new equipment.

The expanded administrative suite provides better customer interface for parents and students and increases security for the school. During the day, visitors are directed through the office to check in before entering the school. In addition, new security door controls (fob/card readers) were installed. Upgrades were made to a number of building systems such as communications, ventilation and electrical.

The school's science and math focus was integrated into the playground which was entirely renovated with new kindergarten, primary and secondary equipment and play surfaces to improve play activities, safety and ADA accessibility. An informal outdoor classroom was constructed on the playground to support art instruction.

Ryan Elementary School

Green Building Features

Sustainable Sites

- Concrete pads were constructed for future bike racks.
- Native seed was used in some areas and more trees were planted.
- Light colored surfaces were used in many play areas.
- New exterior light fixtures direct light downward.

Water Efficiency

- The total area of existing irrigated turf was reduced. Efficient drip irrigation was installed in new plantings.
- New plumbing fixtures are low-flow to save water.

Materials and Resources

- Construction waste was recycled and targeted 25% diversion.
- Where possible, existing space was remodeled to fulfill scope.
- Items such as doors, sinks and faucets were salvaged for reuse.
- Many materials include recycled content such as carpet backing, floor and wall tile, acoustical panels, casework, etc.

Energy and Atmosphere

- New systems were commissioned to assure optimal performance.
- Non-CFC refrigerant was specified in the design.
- New mechanical systems are more efficient than code.
- Efficient windows and insulation were used in the construction.
- The new digital control system is managed centrally and allows for location specific adjustment within the building.
- Classroom and administrative roof structures are solar ready.

Indoor Environmental Quality

- Walls were constructed with acoustic insulation and additional gypsum board layers to improve acoustics. Acoustical ceilings and carpet were used in many areas.
- Roof Top Units can be set to 100% outside air for free cooling.
- Mechanical systems were protected from dust or other contaminants prior to installation
- Low VOC products were used such as carpet, paint and casework.
- Multi-level switches give occupants control over light levels.
- Tubular skylights were installed in new areas and some existing interior classrooms. New classrooms have windows.

Sanchez Elementary School

Project Architect: RB+B Architects
General Contractors: Golden Triangle
Completion Date: Summer 2011

Original Facility Master Plan Budget	*$3,449,086.00*
Return to Surplus	($430,975.64)
Total Project Value	**$3,018,110.36**

"The Bond project has given our entire building such a positive face lift, with new carpet, new color scheme and inviting atmosphere. The building generates a calming and welcoming feel that is reflected back as an effective learning environment."

Doris Candelarie,
Sanchez Principal

The Sanchez Elementary School project included the construction of a new classroom wing totaling 5,443 sq. ft. as well as extensive interior remodeling. The new wing houses the new art room with a patio for outdoor instruction as well as grade level classrooms. The new art room provides adequate lighting, and space for materials and learning.

The office entrance area was remodeled to create secure access to the building and provides a greater sense of safety. New security door controls (fob/card readers) were installed and visitors now enter through the office to check in during the day. The office area is much more professional and is an effective use of work space which benefits teachers and students. The kitchen and cafeteria were enlarged and the new space is bright, safe and more comfortable for students. The kindergarten and primary playgrounds were renovated with new equipment and play surfaces to improve play activities, safety and ADA accessibility. The new small meeting and work spaces are used before and after school and throughout the day to meet the learning needs of students.

Upgrades were made to a number of building systems such as intercom, fire alarm, ventilation and irrigation. New carpet and paint were installed in most of the building.

Green Building Features

Sustainable Sites

- Native seed was used in some areas and more trees were planted.
- Light colored surfaces were used in many play areas.
- New exterior light fixtures are designed to reduce light pollution.

Sanchez Elementary School

Water Efficiency

- New plumbing fixtures are low-flow to save water.
- The total area of existing irrigated turf was reduced. Efficient point-source drip irrigation was installed. A new central controller allows for monitoring of performance and efficiency.

Materials and Resources

- Construction waste was sorted for recycling. The construction waste management plan targeted 25% diversion.
- Where possible, existing space (rather than new construction) was remodeled to fulfill the project scope.
- Many items were salvaged for reuse, including aluminum entry storefront doors, casework, sinks and faucets.
- Many materials include recycled content such as carpet backing, floor and wall tile, acoustical panels, casework, etc.

Energy and Atmosphere

- New systems were commissioned to assure optimal performance.
- Non-CFC refrigerant was specified in the design.
- New mechanical systems are more efficient than code.
- Efficient windows and insulation were used in the construction.
- The new digital control system is controlled centrally and allows for location specific adjustment within the building.
- Classroom and administrative roof structures are solar ready.

Indoor Environmental Quality

- Acoustic insulation was used within walls. Additional gypsum board layers were used to improve acoustics. Acoustical ceilings were installed and carpet was used in many areas. Tops and bottoms of new walls and existing walls were sealed where possible for acoustic performance.
- Roof Top Units can be set to 100% outside air for free cooling.
- Mechanical systems were protected from dust or other contaminants prior to installation.
- Low VOC products were used such as vinyl tile and casework.
- Multi-level switches give occupants control over light levels.
- Tubular skylights were installed in new areas as well as in some existing interior classrooms that did not have windows. New classrooms have windows for daylighting and views. Interior windows were added for a greater sense of transparency.

Southern Hills Middle School

Project Architect: MOA Architects
General Contractor: Golden Triangle Construction
Completion Date: Summer 2009

Original Facility Master Plan Budget	*$10,169,858.00*
Fire Sprinklers - Transfer From Program Reserve	$407,000.00
Asbestos - Transfer From Program Reserve	$250,000.00
Return to Surplus	($15,404.29)
Total Project Value	**$10,811,453.71**

The Southern Hills Middle School project included extensive remodeling as well as new construction totaling over 26,000 sq. ft. Through the project, the school received a new main gym, new band and orchestra classrooms, new science and special education classrooms, a larger library and larger, remodeled administrative and counseling offices and remodeled classrooms.

The school's science program was enhanced at all grade levels with the construction of a new wing which houses science classrooms with improved lab space and classroom flexibility. The remodeled and expanded library has become the "hub" of the school, with up to five classes now able to be in the space to do research and computer work in two attached computer labs. Physical Education classes are safer, and more productive, with expanded gym space. Band and Orchestra classes, with their own classrooms, have expanded practice and performing spaces in which to work both as a whole and in smaller groups. The Food/Cooking classroom was renovated extensively through the project which allows for more student participation in this popular program.

The new construction allowed for the removal of three portable units. All classes are now inside the building which has improved student traffic flow and safety throughout the school. Improved ventilation and lighting in the building has helped make classrooms brighter and improved indoor environmental quality. Students have larger outside courtyard space for lunch-time play.

Southern Hills Middle School

An architectural feature was constructed at the front entry making it more recognizable to visitors. The front door was configured with a double door airlock to increase visibility and control over the entry. The project also included upgrades to building systems such as HVAC, irrigation and fire sprinklers.

Green Building Features

Sustainable Sites

- Added new bike racks and relocated them
- Used built-up roofs, with a light colored aggregate to reduce heat gain

Water Efficiency

- Installed low flow fixtures

Materials and Resources

- Salvaged many of the large boulders and bricks for reuse onsite
- Recycled all materials possible; had sorting bins for recycling and reuse
- To reduce material use, the floor in some areas is finished with stain rather than carpet or tile.

Energy and Atmosphere

- Upgraded the mechanical and electrical systems
- Limited air conditioning in the building
- Installed energy efficient lighting
- Installed motion sensors for lighting
- Sundolier daylighting technology*

Indoor Environmental Quality

- Replaced existing ventilation systems
- Installed thermostats that allow users thermal control within a set range
- The new additions were designed with attention to daylighting and views.

* The Sundolier was donated as a pilot project for this new product but was not paid for with Bond funding.

Summit Middle School

Project Architect: Hutton Architecture Studio
General Contractor: Golden Triangle Construction
Completed: Fall 2008

Original Facility Master Plan Budget	*$4,000,000.00*
Indirect Costs - Transfer From Program Reserve	$1,200,000.00
Return to Program Reserve	($409,917.56)
Transferred to Summit Phase II	($335,508.61)
Total Project Value – Phase I	**$4,454,573.83**

Phase I of the Summit Middle School project provided the school with a new library and support spaces, new science labs and art studio space, expanded and remodeled health clinic and faculty areas and new carpet and floor finishes throughout the building. The project also includes extensive upgrades to the building's systems including mechanical and electrical systems, a new fire sprinkler system, irrigation and communications. In Phase II, a new gym was constructed which was mostly self-funded by the school.

Incorporating sustainable features into the design was a high priority for the design professionals and the design advisory team.

Green Building Features

Water Efficiency

- Installed low flow fixtures

Materials and Resources

- Reused existing light fixtures and duct work to the extent possible
- Recycled existing asphalt where possible
- Recycled existing pea gravel through a contractor negotiated exchange of old gravel from the site for clean
- Used carpet with an overall post-consumer recycled content of 30% or more
- Used linoleum tile flooring which has natural content

Summit Middle School

Materials and Resources (continued)

- Used bio-based tile made from corn or similar natural material; this product includes 10% pre-consumer recycled content, affords low VOC emissions, and offers enhanced performance over traditional vinyl composite tile
- Used local brick as primary exterior finish material

Energy and Atmosphere

- Installed geothermal heating and cooling for the new addition
- Installed high performance (8' diameter) ceiling fans to de-stratify library air volume to reduce cooling and heating needs
- Installed high efficiency electric lighting
- Installed dual switched (50%/100%) motion sensors for lighting
- Used glazed triple pane windows which significantly increase efficiency
- Included a continuous layer of rigid insulation in wall assembly (R6 per inch thickness)
- Upgraded to higher efficiency 100% cotton fiber insulation (recycled blue jeans)
- Library form and roof design has been articulated to provide solar protection for east, west, and southern exposure
- Utilized sunshades on windows with east and west exposure to reduce heat in the classrooms
- Window glazing in classrooms was tuned to each exposure
- Window glazing in the library maximizes natural light while providing glare control through diffusion and specific levels of transmittance
- Solarwall in new gym pre-heats rooftop unit supply air

Indoor Environmental Quality

- Installed operable windows to allow natural ventilation in lieu of mechanical system
- Used low-emitting paints
- Casework was manufactured using low-emitting, formaldehyde-free wood products
- Solid core wood doors were manufactured using low-emitting adhesives and sealants and no added urea-formaldehyde
- Installed Solatubes (w/ dimming capability) in each classroom

Superior Elementary School

Project Architect: MOA Architects
General Contractors: Mark Young Construction
Completion Date: Summer 2010

Original Facility Master Plan Budget	*$605,162.00*
Return to Surplus	($10,697.17)
Total Project Value	**$594,464.83**

The Superior Elementary School project consisted of enlarging the cafeteria and upgrading building systems such as HVAC, irrigation and interior finishes. Repairs were made to exterior walls and pavement.

Green Building Features

Sustainable Sites

- New exterior lighting has a cutoff device to direct light downward.
- Cafeteria has a separate entrance for afterhours use by the community.

Water Efficiency

- A new irrigation controller was installed to more efficiently regulate watering.

Materials and Resources

- The existing cafeteria was reused and enlarged rather than constructing a new one.

Energy and Atmosphere

- A new, more efficient air handling unit was installed.
- New variable air volume controllers were installed.

Indoor Environmental Quality

- Cafeteria addition features large windows for daylighting and views.

University Hill Elementary School

Project Architect: SLATERPAULL Architects
General Contractors: Golden Triangle Construction
Completion Date: Summer 2010

Original Facility Master Plan Budget	*$3,957,110.00*
To Meet Scope - Transfer From Program Reserve	$9,845.42
Total Project Value	**$3,966,955.42**

The University Hill Elementary School project included the construction of a new music room addition totaling 2,241 sq. ft. A new connecting corridor at the addition has a new entry vestibule that provides an accessible entry and exit from the basement educational spaces, including art, music and the gymnasium.

The existing music room was renovated to provide art and gym storage to more closely meet size requirements in the educational specifications. The existing kitchen, cafeteria corridor and staff lounge were completely renovated to provide a second floor administrative office, renovated kitchen and after school program space. The new administrative office location will improve security by giving the reception area visual control of the north and east entries. The renovated space provides an enlarged clinic, two offices, reception and waiting areas. Restrooms were renovated to provide ADA accessibility for students and staff. The existing administration area on the third floor was remodeled into a staff lounge and separate workroom.

Small group instructional spaces were provided within the corridors of each floor by means of mobile partitions and furniture units. The width of the corridors allows the staff to accommodate small groups for the dual language program and for student traffic flow which is part of the culture of the facility.

The roof was repaired and unsafe wood windows were replaced. Existing wood windows were refurbished and repainted and counterweights and weather stripping were replaced. New storage spaces were added to art and gym. Upgrades were made to a number of building systems such as HVAC, boiler controls, electrical, fire alarm, intercom and irrigation.

University Hill Elementary School

Green Building Features

Water Efficiency

- Low flow fixtures, toilets and urinals were installed in remodeled areas. Lavatories have auto sensors and aerators.

Materials and Resources

- Existing space rather than new construction was used to fulfill the scope of work for the cafeteria expansion and main office remodel.
- The project includes materials with recycled content such as metal framing, wall tile, floor tile, gypsum board, glass, ceiling tiles, casework, carpet and brick.
- Brick used in the project was locally sourced.

Energy and Atmosphere

- Energy efficient lighting with occupancy sensors was installed in new areas.
- Walls in the new addition were constructed with continuous, high performance insulation.
- A new, more efficient mechanical system was installed.

Indoor Environmental Quality

- To reduce unwanted noise, walls between classrooms extend to the ceiling. Acoustic insulation was added to the walls.
- Low VOC products and materials were used including carpet, paint, furniture, adhesives and sealants.
- Shading devices were installed on windows to reduce glare.

Whittier International School

Project Architect: SLATERPAULL Architects
General Contractors: Golden Triangle Construction
Completion Date: Summer 2010

Original Facility Master Plan Budget	*$3,472,286.00*
To Meet Scope - Transfer From Program Reserve	$324,974.58
Total Project Value	**$3,797,260.58**

The Whittier Elementary School project included new construction totaling 10,224 sq. ft which provided the school with a new cafeteria and kitchen, new small group spaces, new music room, new art room, new computer lab and a new kindergarten room. An operable partition separates the gym and music classroom, allowing the music room to serve as a platform for performances and assemblies by connection to the gym.

The kindergarten classroom includes a teacher workroom with storage, group room, and casework within the classroom space. The new art suite includes a kiln room, storage for 3 D projects and art storage.

The existing staff lounge, group toilet rooms and a classroom renovated to provide administrative offices on the same level as the main entry off Pine Street

The former administration space was converted into a new classroom and specialist offices. An elevator and lift were installed to provide ADA access to all levels. Upgrades were made to a number of building systems such as intercom, clocks, electrical, HVAC and signage. Select windows were replaced. The playground was upgraded with new equipment and play surfaces to provide additional play activities and improve safety and ADA accessibility.

Green Building Features

Sustainable Sites

- The cafeteria was designed with direct access to allow for community use after hours.

Water Efficiency

- Low flow fixtures, toilets and urinals were installed in remodeled areas. Lavatories have auto sensors and aerators.

Whittier International School

Materials and Resources

- Existing space was used to fulfill the scope of work for a new music room and larger gym.
- The project includes materials with recycled content such as metal framing, wall tile, floor tile, gypsum board, glass, ceiling tiles, casework, carpet and brick.
- Brick used in the project was locally sourced.

Energy and Atmosphere

- Energy efficient lighting with occupancy sensors was installed in new areas.
- Walls in the new addition were constructed with continuous, high performance insulation.

Indoor Environmental Quality

- To reduce unwanted noise, walls between classrooms extend to the ceiling. Acoustic insulation was added to the walls. Acoustic treatments were installed in the cafeteria and multipurpose room.
- Low VOC products and materials were used including carpet, paint, furniture, adhesives and sealants.
- Tubular skylights were installed in the windowless music room to provide natural light.