

Appendix A: Meeting Notes

1. Transcribed Notes from Visioning Meeting

CVCS Means:

Empowerment (for)

- Parents
- Teachers
- Administration
- Students

Community Diversity/Unity/Intimacy

- Sense of Family
- Vertical Integration of Grades
- Builds/spirals out of previous work

Core Knowledge Curriculum

Integration of all needs/abilities

Unique opportunities from:

- Tech Environment
- History
- Art Community

Non-Institutional

Ownership

Fun

Relationship to Community:

Perception of elitism (need to put a better face out to the community)

Brick building is not a welcoming façade

“Rocky” start with Public school district (charter voted down twice, overturned by state)’

working to improve relations

Charter students can play sports in district schools

Not closed campus – parents encouraged to stay/interact

Would be nice to have continuing ed spaces.

Problem Areas with Community

Bike safety/pedestrian improvements needed

Drop off/pick up congestion

Speeding on adjacent streets

No/limited site visibility encourages questionable after-hours activities (fed by previous use of site)

Need to accommodate 5 buses

Community Assets

Bosque del Apache

Art

Sevilleta

BLM

Ranchers

Agriculture

Science/Tech

Vision for Community Interaction

Incorporate textbook repository into library/
Publisher distribution opportunities of other books
Venue for community involvement/outside education
Meeting facilities for outside groups
Farm to school – food/education
Destination resort school! (inviting campus)
Medium size performing arts space
Student banking/teller program (First State Bank)
Summer use/programming (especially for older kids)

Desirable features for spaces

Flexible
Allow for separation of activities within a single room
Outdoor spaces for learning, eating
Natural Lighting
Round hallway with central garden area
Non-elitist/Inclusive/inviting
Welcoming/inviting/open
Exposed infrastructure (for educational opportunities)
Not completely carpeted
“Homey”
Fun
Space in classroom for projects
Park Atmosphere
Environment itself is didactic
Avoid edges, rows, and squares
Good acoustics
Bring outdoors in

Existing Building:

Options:
Demolish
Keep shell intact
Keep some aspects
No preference (i.e., whatever makes most sense in terms of need)

What do you not like about some schools?

No windows/poor light
Boxy spaces
Hallways
Anonymity/Everything looks the same
Large class sizes
Large campus feel
Institutional/antiseptic/industrial
Lack of color
Echoey hallways/poor acoustics
Compartmentalizing of administration from rest of school community
Lack of storage for both teachers and students
In classrooms all day/static environment

Great distances between teacher's office and teacher's lounge and/or workroom
Lack of commons
Younger kids far away from parking
Impervious and immovable facility – kids can't manipulate their own environment/make their own mark
Parents are not welcome
Difficult to access and to linger

What do you like about some schools?

Younger grades have reasonable class sizes/student-teacher ratios
Area rugs/partial carpet
Diverse spaces (high schools)/changing classes
Common assembly area

What happens here?

Parents linger and communicate

What does sustainability mean?

Teachable to kids

- Greywater
- Natural light
- Recycling parts of old building
- Multi-use spaces

Energy Efficiency

- HVAC systems
- Insulation
- Orientation/light & wind, etc.

Operable windows with operable shade

Xeriscape w/trees for shade

Multi-use spaces

Demonstrate connectivity/continuity

Different building materials as demonstration/learning opportunities

What does outdoor learning mean?

Demonstrate a variety of habitats

Outdoor eating

Textured, exploratory spaces

Opportunities to draw, observe, take scientific measurements

Places that invite exploration

Outdoor accessibility

Landscape as didactic experience

Provide shade, seating, and storage to facilitate informal, outdoor learning experiences

Multi-use spaces

Transcribed Notes from Visioning Meeting - Student Input

(Dislikes)

Kids were not nice
Bad Lunch
Leaky roof
Scheduling Eating and Playing
Too cold for year round outside classroom

(Likes/Would Like)

2 stories w/slide that connects
Smaller class
Halls with lockers
Classrooms with windows
Bigger more interesting playground/rock climbing wall
Building playground (opportunity to construct their own playground)
Adaptable eating area
Trees and grass and green things
More sports areas
2 playgrounds (one for younger and one for older)
More books at library
Greenhouse
Comfy places – window seats in library
Gym-Cafeteria-Auditorium
Maze/Labyrinth
After School Activities (Scouts)
Play House
Nurses Office for sickies
Art room – inside and outside

2. Transcribed Notes from Programming Meeting

Site Uses

Outdoor picnic area (with removable cover)

Amphitheater performance space / (organic form/seating areas)

Oval hallway with central courtyard in building

Separate space for field games (soccer)

Paved area for ball play (also basketball)

Ample, safe, parking for cars and bicycles

- Separate bus lane
- Safe pick-up/drop-off area (covered preferably)
- Separate parent parking area (approx. same capacity as staff lot)

Perimeter fence:

- Campus open and attractive to public during week but able to be secured during off hours/weekends
- Adaptable, high visibility

Spaces for planting/growing, farming

Outdoor art exhibit spaces (or visible from outside)

Play area adaptable/rearrangeable as much as possible

- Accessible to wheelchairs, etc.
- Allow unstructured play area
- Swings are a definite need/want
- Climbing wall/other facilities for upper body development

Gardens

- Thematic/demonstration areas of different plant types, etc.
- Green house for non-indigenous plants
- Vegetable gardens for participatory planting

Outdoor kitchen space with water, etc.

Kiln

Potting shed (or comparable area in greenhouse)

Walkways easy to maintain (wood tends to ice) colored concrete

Quiet spaces for children not interested in playing during recess (interactive music space for solitary activities)

Trees/shade important

Earth sheltered/green roof

Transition Zone/Building Interface

Overhang/protection at entryways (rain gutters)

Incorporate kids' art "everywhere"

Soften walk areas (personalized bricks, etc.)

Make use of structure for other purposes (green roofs, play, etc.)

- Organic forms
- Concept of making it look like something else

Spaces need to be "supervisable" (no "nooks")

Protect inside from noises outside (and other inside noises)

Building

Basement for storage/also storm shelter

Teachers lounge / work area

- in centralized area
- cool/separate to get work done
- mailboxes

Shared, centrally located storage for art & science supplies and other bulk supplies

Decentralized janitorial closets (one with washer/dryer)

Big library (also possible textbook repository/teacher resource)

- teacher's book room (adjacent)
- librarian's office
- media storage (projectors, laptops, etc.)

Art room

Indoor gym/P.E. facility with showers/changing rooms

Decentralized bathrooms (in classrooms or shared for 2 classrooms) and public ones

Band room (may be multi-use)

Detention area

Study Hall

Computer facilities (separate or integrated)

Public access/community room with kitchen

Cafeteria

Subdividable or other small academic support areas and therapy/special needs areas for 1 on 1 opportunities

Administrative Spaces

Centrally located offices/admin/nurses station, near front for visibility/approachability

Separate offices for principal, business manager

Conference room

Work area (copiers, etc.)

Classrooms

(20 students per class, typically +/- 2)

Kindergarten

Lots of space and storage

Kitchenette / lunch prep area

Bathroom separate sink with storage and drinking fountain (separate sink & drinking fountain)

Tactile opportunities

Expandable/reconfigurable

Nap area

Natural light but not distraction of lower windows

Washable surfaces

Direct connection to outside desirable

Raised area for plays, presentations, etc. (could double as nap area)

Personal storage areas and hooks

1st Grade

Operable windows

Similar to kindergarten wish list (drinking fountains, bathrooms, etc.)

Science work area

Floor-based activities

Book storage/shelves/"library" space

2nd Grade

Foot operable or automatic sink for “quick washups”
Flexible cabinets/shelves, moveable
Reconfigurable
Washable surfaces/no carpets; use rugs where needed
Doors to outside and adjacent rooms
Hooks for coat and backpack with cubbies below

3rd Grade

White wall or wide screen for projection
Natural light, but limited lower windows (operable)
Lots of clear wall space (without windows)
Connections between classrooms and outside
No hidden corners
Welcoming foyer/entry area/transition zone from school into class (w/bulletin board, benches, table, etc.)
Flexible/modular

4th-5th Grade

Sink and counters
More space in general to subdivide
Storage areas for personal items
Well lit
Window distractions not such an issue
No carpet
Storage

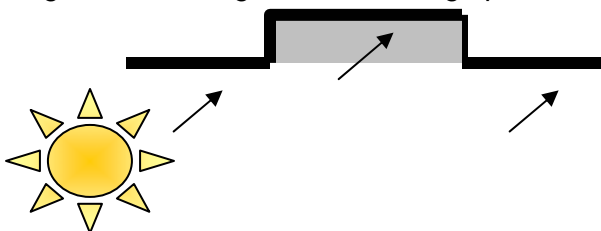
6th, 7th, 8th

Core with lockers and entries to each classroom
Lots of movement between classes
Separate entrance and exit for traffic flow
Three to Four spaces (3 for dedicated, subject-specific faculty plus one for specialty classes)

Transcribed Notes from Programming Meeting (Student Session)

What do you like about the current facility?

Outdoors is incorporated into daily life
Fresh Air
Plants in “courtyard”
Shade (where available)
Basketball court
Doesn't feel too crowded
Like being sheltered from the street by the old hospital building
Like to eat outside (cafeterias can be too noisy)
Office and library are adjacent
The mulberry tree on the Northwest corner of the property
SE facing outdoor wall good for warming up in winter and staying cool in the summer



What don't you like about the current facility?

Lack of gym

Rocks and gravel surfacing

That the old hospital building hides the school/no one knows they're there

People don't know that CVCS exists

Bus drop off area is uncomfortable and not well-sheltered

Poor circulation hierarchy between buses, cars, cyclists and pedestrians

Poor access to library

Outdoor eating areas can get messy and infested with ants

Playground is too hot

Square rooms

Small desks (lack of storage space)

2 students per desk (storage space conflicts)

What would you like in a new facility (inside/sheltered)?

Separate room for each subject (music, science, art, band, etc.)

Connectivity between classrooms

Cafeteria with perhaps a cooking/home economics area (would like the option to not eat outside/ don't like eating at desks during bad weather) Cafeteria could be multi-purpose (gym, cafeteria, PE, auditorium)

Place to have PE when there's bad weather

Large library

- Separate buildings or areas for upper and lower level classes
- Comfortable seating areas
- Window seats
- More books

More computers (Currently there are 2 computers per classroom, sometimes students have difficulty accessing them. Students use computers for research, Spanish and powerpoint presentations)

More windows/bigger windows

No hallways

Lockers in public space (only 6,7,8 graders need lockers)

6,7,8, should have distinct area from other grades/better separation between different grade levels

Student lounge (loud area and quiet area)

Art room

Area to store PE equipment

Nurses office

Transitional

Auditorium

Room for after-school activities

What would you like in a new facility (outside)?

Bulletin board

More water fountains

Good visibility across outdoor areas to see who's coming and going

Don't want to face the direct sun when saluting the flag in the morning

Grass. Buffalograss is a low water use option

Bikes should be parked in a public space

Appendix B: Sustainable Design Concepts

I Sustainable Site Concepts

A. General

It is important to minimize project impacts on surrounding areas after construction is complete and the building is occupied. By addressing heat island effects and reducing light pollution on the site, the building may become integrated into its surroundings and serve as a considerate and beneficial neighbor for the lifetime of the building.

B. Summary of Project Requirements

Site – Earthwork Considerations - The intent of this section is to conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

1. **Erosion & Sedimentation Control**

The intent of this section is to control erosion and to reduce negative impacts on water and air quality. It is suggested that a *Sediment and Erosion Control Plan* be designed that conforms to the US EPA Document No. EPA 832/R-92-005 (September 1992) Stormwater Management for Construction Activities, Chapter 3 or local Erosion and Sedimentation Control Standards, whichever is more stringent.

Sustainable Design Strategies

Stabilization measures addressed may include temporary or permanent seeding or mulching; and if structural control measures are necessary, silt fencing, sediment traps or sediment basins.

2. **Reduced Site Disturbance, Protect or Restore Open Space**

In general, limit site disturbance including earthwork and clearing of vegetation to a maximum of 30 feet beyond the building perimeter, 5 feet beyond primary roadway curbs, walkways and main utility branch trenches, and 25 feet beyond pervious paving areas that require additional staging areas in order to limit compaction in the paved area. On this site, restore a minimum of 50% of the remaining open area by planting native or adapted vegetation.

To maximize the potential of the site, select a suitable building location and design the building with minimal footprint to minimize site disruption. Establish floor grades that have the least impact on site grading and work with existing contours to minimize grading. Establish clearly marked construction boundaries to minimize disturbance of the existing site and restore previously degraded areas to their natural state.

Site – Water Systems - The intent of this section is to limit disruption and pollution of natural water flows by managing stormwater runoff.

1. **Stormwater Management, Rate & Quantity**

For this site, existing imperviousness is greater than 50%, implement a stormwater management plan that results in a minimum 25% decrease in the rate and quantity of stormwater runoff.

Sustainable Design Strategies

Stormwater runoff should be absorbed and captured in cisterns or ponds to the fullest extent possible, with the remainder moving across the site into landscaped areas wherever possible. This contributes to a reduction in up front costs for infrastructure and a savings in water down the line. Cisterns, bioswales or other rainwater catchment and treatment features may also act as a learning tool for students.

2. Stormwater Management, Quality

Design a stormwater treatment system that is capable of removing 80% of the average annual post development total suspended solids (TSS) and 40% of the average annual post development total phosphorous (TP) based on the average annual loadings from all storms less than or equal to the 2-year/24-hour storm. Do so by implementing Best Management Practices (BMPs) outlined in Chapter 4, Part 2 of the US EPA's Guidance Specifying Management Measures for Sources of Non-point Pollution in Coastal Waters (EPA 840-B-93-001c January 1993).

Site – Alternative Transportation - The intent of this section is to reduce pollution and land development impacts from automobile use.

1. Support Bicycle use

To achieve this goal we must provide suitable means for securing bicycles for building occupants.

Sustainable Design Strategies

Incorporate safe and effective parking for storage of bicycles.

2. Support the Use of Alternative Fuel and High Occupancy Vehicles

It is suggested to provide preferred parking for alternative fuel and hybrid vehicles and to accommodate carpools or van pools with drop-off zones and parking. *Options for alternative fuel buses include electric, hybrid electric, compressed natural gas, ethanol, methanol, and biodiesel.*

Site – Heat Island Effect - The intent of this section is to reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat.

1. Heat Island Effect, Non-Roof

Provide shade (within 5 years) on at least 30% of the non-roof impervious surfaces on the site, and/or use light-colored/high albedo materials (reflectance of at least 0.3) for 30% of the site's non-roof impervious surfaces, or use an open-grid paving system (net impervious area of less than 50%) for a minimum of 50% of the parking lot area. OR, use an open grid paving system for a minimum of 50% of the parking lot area.

2. Heat Island Effect, Roof
Use an *Energy-Star* roof with a minimum initial reflectance of 0.65, a minimum three-year-aged reflectance of 0.5, and a minimum emissivity of 0.9 covering a minimum of 75% of the total roof area, or install a green (vegetated) roof for at least 50% of the roof area.

Sustainable Design Strategies

Shading HVAC equipment from direct sunlight can significantly lower the cooling demand. Landscaping can greatly reduce the impact of heavy radiation loads on buildings and parking lots. During site planning, wind patterns should be considered in conjunction with goals to provide the building an adequate amount of natural daylight and shade.

Cool Roofs – Cool roofs are characterized by two features. They are light in color thus have a high solar reflectance, meaning that the solar radiation is reflected rather than absorbed by the roof surface which will reduce cooling loads and contribute to HVAC unit efficiency. Second, they have high or normal emittance, which is the percentage of energy that would be radiated to the sky from a surface. For example, galvanized metal has a low emittance, which means when they warm up they cannot easily release their heat by radiating it back to the sky. Keeping the roof cool reduces cooling loads and also reduces expansion and contraction of roofing materials, which may increase the life of the system. Cool roofs may either be single-ply membrane or liquid applied. When choosing a roof system, consider using non-PVC options to avoid the impact of PVC on the environment.

Green Roofs – Green or vegetated roofs can absorb and slow rainwater runoff to reduce peak loads on sewer systems. They also help reduce building heat gain and minimize the heat island effect. Plantings may also absorb carbon dioxide. Green roofs help conserve energy due to the highly insulative quality of the system.

Site – Exterior Lighting - The intent of this section is to eliminate light trespass from the building site, improve night sky access, and reduce development impact on nocturnal environments.

1. Light Pollution Reduction
To meet these requirements, meet or provide lower light levels and uniformity ratios than those recommended by IESNA Recommended Practice Manual: Lighting for Exterior Environments (RP-33-99). Design exterior lighting such that all exterior luminaires with more than 3500 initial lamp lumens meet the Full Cutoff IESNA Classification. The maximum candela value of all interior lighting shall fall within the building and the maximum candela value of all exterior lighting shall fall within the property. Any luminaire within a distance of 2.5 times its mounting height from the property boundary shall have shielding such that no brightness from that luminaire crosses the property boundary.

II Water Efficiency

A. General

Using large volumes of water increases maintenance and life-cycle costs for building operations and increases consumer costs for additional municipal supply and treatment facilities. Conversely, facilities that use water efficiently can reduce costs through lower water use fees, lower sewage volumes to treat, energy and chemical use reductions, and lower capacity charges and limits.

B. Summary of Project Requirements

Site – Water Efficiency - The intent of this section is to limit the use of potable water for landscape irrigation.

1. **Water Efficient Landscaping, Reduce or Eliminate Potable water use**
It is recommended that high efficiency irrigation technology or captured rain or recycled site water be used to reduce potable water consumption for irrigation by 50% or more over conventional means utilizing primarily captured rain or recycled site water be used for site irrigation, or that we do not install permanent landscape irrigation systems

Sustainable Design Strategies

The school will benefit from conserving water by reduced water consumption and reduced utility costs. To achieve water conservation goals, consider the following:

- Use vegetation that is drought-tolerant and native to the school's climate area.
- Preserve or replant existing vegetation wherever possible.
- Use high efficiency irrigation systems, such as drip irrigation or subterranean irrigation, which are up to 95% efficient.
- Avoid the use of conventional spray head systems, which deliver only 55% to 65% of the water to the ground.
- Use recycled or reclaimed site water for site irrigation.
- Consider the use of cisterns to store rainwater for reuse. Cisterns also act as a valuable learning tool for the students.

Building – Water Efficiency - The intent of this section is to reduce the generation of wastewater and potable water demand, while increasing the local aquifer recharge.

2. **Innovative Wastewater Technologies**
The use of municipally provided potable water for building sewage conveyance must be reduced by a minimum of 50% over baseline conditions, or 100% of the wastewater on the site must be treated to tertiary standards.

Sustainable Design Strategies

Specify high-efficiency fixtures and/or dry fixtures to reduce wastewater volumes. Consider reusing stormwater or gray water for sewage conveyance or on-site wastewater treatment systems. Water reduction strategies may reduce consumption by up to 30% over conventional standards, resulting in lower

environmental costs and reduced load on wastewater facilities. It is recommended that low flow toilets be specified with a flow rate of 1.2 GPF. Bathroom lavatory faucets should be specified with a flow rate of 1.8 GPM and auto controls that will further reduce flow by 25%.

III Energy & Atmosphere

A. General

Energy consumption can be dramatically reduced through practices that are economical and readily achievable. Improving the energy performance of a building reduces operating costs, reduces pollution generated by power plants and other energy producing equipment, and enhances occupant comfort. It is helpful to consider a building's energy load as a whole, to integrate energy efficiency measures and form synergistic relationships.

B. Summary of Project Requirements

Building Follow-through - The intent of this section is to verify and ensure that fundamental building elements and systems are designed, installed and calibrated to operate as intended.

1. Fundamental Building Systems Commissioning

To meet this mandatory prerequisite the following fundamental best practice commissioning procedures must be implemented:

- Engage a commissioning authority.
- Develop owner's performance requirements for energy, water and IEQ and review the basis of design to verify performance requirements have been met.
- Include commissioning requirements in the construction documents.
- Develop and utilize a commissioning plan.
- Verify installation, functional performance, training and operation and maintenance documentation.
- Complete a commissioning report.
- A commissioning authority independent of the design team shall conduct a focused review of the design prior to the construction documents phase.
- The independent commissioning authority shall conduct a focused review of the construction documents near completion of the construction document development and prior to issuing the contract documents for construction.
- The independent commissioning authority shall review the contractor submittals relative to systems being commissioned.
- Provide information to the owner in a single document that is required for re-commissioning building systems.
- Have a contract in place to review building operation with O&M staff, including a plan for resolution of outstanding commissioning-related issues within one year after construction complete date.

Building commissioning is the process of ensuring that systems in schools are designed, installed, tested, and verified as being capable of operating according to the school's needs and the designer's intent. High performance schools can

only be achieved with some level of building commissioning. Higher test scores, increased average daily attendance, reduced operational costs, staff retention, and reduced liability may be compromised unless critical systems are commissioned to achieve proper performance. A Building Commissioner should be hired early in the project and building commissioning requirements should be included in the construction documents.

14. Measurement & Verification

Provide for the ongoing accountability and optimization of building energy and water consumption performance over time. Install continuous metering equipment for the following end-uses:

- Lighting systems and controls
- Constant and variable motor loads
- Variable frequency drive (VFD) operation
- Chiller efficiency at variable loads (kW/ton)
- Cooling load
- Air and water economizer and heat recovery cycles
- Air distribution static pressures and ventilation air volumes
- Boiler efficiencies
- Building specific process energy efficiency systems and equipment
- Indoor water risers and outdoor irrigation systems

Develop a Measurement and Verification Plan that incorporates the monitoring information from the above end-uses and is consistent with Option B, C or D of the 2001 IPMVP Volume I: Concepts and Options for Determining Energy and Water Savings.

Energy Performance - The intent of this section is to establish a minimum level of energy efficiency for the base building and systems and achieve increasing levels of energy performance above the minimum standard to reduce environmental impacts associated with excessive energy use.

1. Minimum Energy Performance

The design must meet energy efficiency and performance standards as required by ASHRAE/IESNA 90.1-1999 or the local energy code, whichever is more stringent.

2. Energy Use Reductions

The design energy cost reduced compared to the energy cost budget for regulated energy components described in the requirements of ASHRAE/IESNA Standard 90.1-1999, as demonstrated by a whole building simulation using the Energy Cost Budget Method described in Section 11.

Sustainable Design Strategies

Building Envelope – the construction of the building enclosure, especially its air and vapor permeability, color, levels of insulation, resistance to unplanned air leakage and thermal mass, has a significant effect on both energy efficiency and occupant comfort.

Radiant Barriers – In construction assemblies that have a cavity much of the heat transfer from the warmer surface to the cooler surface is due to radiation. A radiant barrier can reduce this component of heat transfer. A radiant barrier is a shiny metallic surface on one or more sides of the cavity that has a low emittance.

Insulation – Insulation is an inexpensive way to increase the energy efficiency of a building. Blown-in cellulose is a good insulation alternative. It provides a better R-value per inch, fills in hard to reach gaps, and is made from recycled, non-toxic materials. Combining blown-in cellulose insulation with a thin layer of rigid insulation on the exterior of the building will provide the most effective insulation system because it also reduces heat loss through infiltration. Choose ozone friendly rigid insulation. If fiberglass insulation must be used, there are green alternatives to choose from.

Foundation Systems – Options exist for foundation systems that provide more environmentally friendly alternatives. Aerated concrete is lighter, uses less material than standard concrete and has better insulating properties. Insulated concrete formwork should also be considered. Many ICFs have recycled content, good insulation values, reduce the use of cement, and are easier and quicker to install than standard concrete foundations. If concrete materials are used, specify flyash as a percent replacement for cement. Flyash is an industrial waste product and less energy intensive than cement. Another option to consider is using sill sealers to limit infiltration at the connection of foundation to wall.

Timers for Recirculating Hot Water Systems

3. Renewable Energy

Encourage and recognize increasing levels of self-supply through renewable technologies to reduce environmental impacts associated with fossil fuel energy use. Use on-site renewable energy systems to offset building energy use. Acceptable systems include wind, solar, geothermal, or biomass.

Sustainable Design Strategies

Renewable energy systems release less pollutants, save school districts money over the long term and serve as valuable teaching tools for students and faculty. Renewable energy systems to consider for this project include solar assisted hot water heating, photovoltaics for electricity production, and wind turbines for electricity or pumping for site irrigation.

Mechanical Systems - The intent of this section is to reduce ozone depletion.

1. CFC Reduction in HVAC&R Equipment

No CFC-based refrigerants must be used in new building HVAC&R systems. Additionally, this project can support early compliance with the Montreal Protocol by specifying HVAC, any refrigeration equipment and fire suppression systems that do not contain HCFC's or Halon.

IV Materials & Resources

A. General

Building materials choices are important in sustainable design because of the extensive network of extraction, processing, and transportation steps required to process them. Activities to create building materials pollute the air and water, destroy natural habitats, and deplete natural resources. Construction and demolition wastes comprise about 40% of the total solid waste stream in the United States.

When new materials are used in buildings it is important to consider different material sources. Salvaged materials can be included in the project to add character to the building and savings on material costs. Recycled content materials reuse waste products that would otherwise be deposited in landfills. The use of local materials supports the local economy and reduces the impacts of transportation. The use of rapidly renewable materials and certified wood minimizes the impact of natural resource consumption to create new building materials.

B. Summary of Project Requirements

Recycling and Waste Systems - The intent of this section is to facilitate the reduction of waste generated by the creation of the building and its occupants that is hauled to and disposed of in landfills.

1. Storage & Collection of Recyclables

Provide an easily accessible area that serves the entire building and is dedicated to the separation, collection and storage of materials for recycling including at a minimum paper, corrugated cardboard, glass, plastics and metals. The minimum recommended area for this building is 175 SF.

Sustainable Design Strategies

An effective waste reduction plan will incorporate an organized system for recycling paper, plastics, glass and aluminum. Implementing a well-coordinated program will prove cost-effective for the school. A recycling program minimizes the amount of waste produced thereby reducing waste disposal costs. Several cases indicate that a recycling program can result in a 40% to 60% reduction in the number of weekly trash pickups.

Collection points should be accessible throughout the school building and grounds. Recommended collection areas are classrooms (paper), break areas (aluminum, plastics, glass), cafeteria (paper, aluminum, plastic, glass, food waste), offices & support areas (paper), library (paper), and next to trash bins. Allocate space on site for dumpsters for recyclables. In order to implement an effective program, a School Recycling Program must be created and recycling efforts must be coordinated with local waste handlers and buyers.

2. Construction Waste Management

Divert construction, demolition and land clearing debris from landfill disposal and redirect recyclable materials back to the manufacturing process. Construction,

demolition and land clearing waste must be recycled or salvaged and a Construction Waste Management Plan must be developed and implemented that quantifies material diversion by weight.

Sustainable Design Strategies

A Construction Waste Management Plan will describe recycling goals, construction practices to achieve these goals, methods to train or communicate these goals to field personnel and methods to track progress. The Construction Waste Management Plan should be included in the specifications.

3. Resource Reuse

Reuse building materials and products in order to reduce demand for virgin materials and to reduce waste, thereby reducing impacts associated with the extraction and processing of virgin resources. Use salvaged, refurbished or reused materials, products and furnishings for building materials.

4. Recycled Content, 5% Post-Consumer or 10% Post Consumer + Post Industrial

Increase demand for building products that have incorporated recycled content materials, therefore reducing the impacts resulting from the extraction of new virgin materials. Use materials with recycled content such that post consumer recycled content constitutes at least 5% of the total value of materials in the project or combined post-consumer and post-industrial recycled content constitutes at least 10%.

Many building materials exist that have recycled content.

- High recycled content steel. It uses less embodied energy and reduces jobsite waste.
- Engineered wood products instead of dimensional lumber. Engineered wood is typically lighter weight, uses fewer virgin resources and oftentimes provides a more plumb alternative to standard wood products.
- Cellulose insulation produced with 100% recycled newsprint.
- Most gypsum board products.
- Acoustical ceiling tile.
- Most carpets, especially carpet tiles.
- Toilet partitions.

5. Materials Manufactured Regionally

Increase demand for building products that are manufactured within the region, thereby reducing the environmental impacts resulting from their transportation and supporting the local economy. Specify that the building materials are manufactured within a 500-mile radius of the job site.

By specifying materials that are local to the job-site, pollution due to transportation of materials is reduced, the local economy is supported and materials are used that are more appropriate for the climate and culture.

There are several major cities within 500 miles of the site including Denver CO, Phoenix AZ and El Paso TX. See attached map.

13. Rapidly Renewable Materials

Reduce the use and depletion of finite raw, and long-cycle renewable materials by replacing them with rapidly renewable materials (less than a 10 year planting and harvesting cycle). Specify rapidly renewable materials for building materials.

Examples of rapidly renewable materials include cork, bamboo, strawboard, linoleum, poplar OSB, sunflower seed board, and wheatgrass cabinetry. Marmoleum is a brand of linoleum that is non-toxic alternatives to VCT. VCT is a non-renewable resource and, according to the US Department of Health and Human Services, has been proven to cause dizziness, liver cancer, nerve damage and immune system problems.

14. Certified Wood

Encourage environmentally responsible forest management. Specify wood-based materials in the project certified in accordance with Forest Stewardship Council Guidelines, including but not limited to structural framing, general dimensional framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, concrete form work and pedestrian barriers.

See the web site, <http://www.certifiedwood.org> to search for FSC Certified Forest woods by product, species and region.

C. Local Materials Map

The following map shall be used in determining local materials.



V Indoor Environmental Quality

A. General

On average, Americans spend 80% to 90% of their time indoors and as a result, the quality of the indoor environment has a significant influence on health, productivity, and quality of life. Implementing strategies to improve the indoor environmental quality of a building may reduce potential liability, increase the resale value of a building and increase productivity and learning of building occupants. IEQ issues to consider include illumination, acoustics, occupant control of building systems, daylighting and ventilation effectiveness.

Summary of Project Requirements

IEQ – General Air Quality Standards - The intent of this section is to establish a minimum indoor air quality performance to maintain and foster the health and well being of the occupants and to prevent the development of indoor air quality problems in buildings.

1. **Minimum IAQ Performance**

The design must meet the minimum requirements of voluntary consensus standard ASHRAE 62-2001, Ventilation for Acceptable Indoor Air Quality and published Addenda using the Ventilation Rate Procedure.

Sustainable Design Strategies

Locate air intakes away from contaminant sources.

Integrate indoor planting zones for oxygenation and humidification.

2. **Environmental Tobacco Smoke Control**

Prevent exposure of building occupants and systems to environmental tobacco smoke – a complex airborne pollutant with many negative health effects. Smoking must be prohibited in the buildings and should be prohibited on the school grounds.

Sustainable Design Strategies

Require that the school have a mandatory no-smoking policy inside the building and on the grounds.

3. **Carbon Dioxide Monitoring**

Install a permanent carbon dioxide monitoring system that provides feedback on space ventilation performance in a form that affords operable adjustments. Refer to CO2 differential for all types of occupancy in accordance with ASHRAE 62-2001, Appendix D.

Sustainable Design Strategies

Design the HVAC system with carbon dioxide monitoring sensors and integrate these sensors with the building automation system. The maximum concentration differential in ppm is 10,300/ventilation rate in cubic feet per minute. For mixed-use buildings calculate CO2 levels for each separate use.

Integrate indoor planting zones for oxygenation and humidification.

4. Ventilation Effectiveness

Design ventilation systems that result in an air change effectiveness greater than or equal to 0.9 as determined by ASHRAE 129-1997.

Sustainable Design Strategies

Design the HVAC system and building envelope to optimize air change effectiveness. Air change effectiveness can be optimized using a variety of ventilation strategies including displacement ventilation, low-velocity ventilation, and plug-flow ventilation such as under floor or near floor delivery.

Integrate indoor planting zones for oxygenation and humidification.

IEQ – Pre & Post Construction IAQ Plans - The intent of this section is to prevent indoor air quality problems resulting from the construction process, to sustain long-term installer and occupant health and comfort.

1. Construction IAQ Management Plan, During Construction

Implement an *IAQ Management Plan* during construction and pre-occupancy phases of the building as follows:

- During construction, meet or exceed the minimum requirements recommended in Design Approaches of the SMACNA IAQ Guidelines for Occupied Buildings Under Construction, 1995.
- Protect stored on-site or installed absorptive materials from moisture damage.
- Replace all filtration media immediately prior to occupancy. Filtration media shall have a MERV of 13, as determined by ASHRAE 52.2-1999 for media installed at the end of construction, and a MERV of 8, for media used to protect HVAC at each return air grill during construction.

Sustainable Design Strategies

Preventative job-site practices can reduce residual problems with indoor air quality in the completed building and eliminate undue health risks for workers. Healthy job site planning will adequately address problem substances, including construction dust, chemical fumes, off-gassing materials, and moisture. Areas of planning will include product substitutions and materials storage, safe installation, proper sequencing, regular monitoring, as well as safe and thorough cleanup.

SMACNA addresses IAQ management in the following five areas:

- *HVAC protection* addresses items such as sealing openings with plastic and providing filtration systems.
- *Source Control* addresses items such as specifying nontoxic materials such as paints, carpets and finishes (as covered under MR Credit 5) as well as nontoxic caulks, sealants and cleaning products.
- *Pathway Interruption* addresses isolating areas of work to prevent contamination of clean or occupied spaces and utilizing pressure differentials to prevent contaminated air from entering clean areas.
- *Housekeeping* involves using cleaning activities that concentrate on HVAC and building spaces to remove contaminants prior to occupancy and

protecting building materials from weather and contamination prior to installation.

- *Scheduling* addresses specifying construction sequencing to reduce absorption of VOCs by materials that act as sinks.

2. Construction IAQ Management Plan, After Construction

Develop and implement an Indoor Air Quality Management Plan for the construction and post-occupancy phases of the building as follows:

- After construction and prior to occupancy, conduct a minimum two-week building flush-out with new filtration media at 100% outside air after construction ends and prior to occupancy. Replace filtration media used after the flush-out with new filtration media that have a MERV of at least 13.
- OR conduct a baseline indoor air quality testing procedure consistent with current EPA Protocol for Environmental Requirements, Baseline IAQ and Materials, for the Research Triangle Park Campus, Section 01445.

IEQ – Low-Emission Materials and Airborne Pollutants - The intent of this section is to reduce the quantity of indoor air contaminants and to avoid exposure to materials that are odorous or potentially irritating or potentially hazardous to installer and occupant health and comfort.

1. Low-Emitting Materials, Adhesives & Sealants

Specify that all adhesives meet or exceed VOC limits as defined by the South Coast Air Quality Management District Rule #1168, and all sealants meet or exceed VOC limits as defined by the Bay Area Air Quality Management District Reg. 8, Rule 51.

2. Low-Emitting Materials, Paints & Coatings

Specify that all paints meet or exceed the VOC and chemical component limits of Green Seal requirements.

3. Low-Emitting Materials, Carpet

Specify that all carpet meets or exceeds the Carpet and Rug Institute Green Label Indoor Air Quality Test Program.

Sustainable Design Strategies

Favorable carpet choices are low-VOC, durable, made with recycled content (MR Credit 4.1), can be easily cleaned and maintained, and are constructed to prevent mold growth. Where practicable, select a carpet and pad that are recyclable at the end of their life. Also consider carpet tiles wherever possible to minimize waste.

4. Low-Emitting Materials, Composite Wood

Specify that all composite wood products contain no added urea-formaldehyde resins.

5. Indoor Chemical & Pollutant Source Control

Provide permanent entryway systems (grills, grates etc.) to capture dirt and particulates from entering the building at all high volume entryways. For areas such as copy rooms and janitor rooms where chemical use occurs, provide

structural deck to deck partitions with separate outside exhaust at a rate of at least 0.50 cubic feet per minute per square foot, no air recirculation and maintaining negative pressure of at least 7 PA (0.03 inches of water gauge). Provide drains plumbed for appropriate disposal of liquid waste in spaces where water and chemical concentrate mixing occurs.

IEQ – Thermal Comfort and User Controls - The intent of this section is to provide a high level of thermal, ventilation and lighting system control by individual occupants or specific groups in multi-occupant spaces to promote health, productivity, comfort and well-being of building occupants.

1. **Controllability of Systems, Perimeter Spaces**
Provide a minimum of one operable window and one lighting control zone per 200 SF for all occupied areas within 15 feet of the perimeter wall.
2. **Thermal Comfort, Comply with ASHRAE 55-1992**
Comply with ASHRAE Standard 55-1992, Addenda 1995 for thermal comfort standards including humidity control within established ranges per climate zone.
3. **EQ Credit 7.2 Thermal Comfort, Permanent Monitoring System**
Install a permanent temperature and humidity monitoring system configured to provide operators control over thermal comfort performance and effectiveness of humidification and/or dehumidification systems in the building.

IEQ – Daylighting and Views - The intent of this section is to provide a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

1. **Daylight Interior Spaces**
Achieve a minimum daylight factor of 2% in at least 90% of all spaces occupied for critical visual tasks, not including copy rooms, storage areas, mechanical, laundry, and other low occupancy support areas.

Sustainable Design Strategies

The following principles provide fundamental guidance in designing daylight schools:

- Prevent direct sunlight penetration into glare-sensitive teaching spaces.
- Provide gentle, uniform light throughout the space
- Avoid creating sources of glare
- Allow teachers to control daylight with operable louvers or blinds
- Design the electric lighting system to compliment the daylighting system and encourage maximum energy savings through the use of lighting controls
- Plan the layout of interior spaces to take advantage of daylight conditions

Classroom Daylighting

In order to distribute light uniformly throughout a space and reduce glare, use light shelves with high clerestory glazing. Provide a minimum perimeter ceiling height of 9.5' or higher. Position the light shelf at 7' or more above the floor. Design so that users are not tempted to use it as a

shelf and so that they are easy to clean. Light shelves are most effective on the south orientation. Switch the first row or two of artificial lights adjacent to the window wall separately to conserve energy on bright days.

Consider using skylights to wash the wall opposite the windows with natural light or use centrally located skylights to provide uniform daylighting across the room. The glazing for skylights may either be vertical or horizontal. Vertical glazing is more energy efficient in hot climates because they do not have the tendency to gain as much heat as horizontal glazing. By using daylighting strategies, energy savings from reduced lighting loads may be realized up to 80%.

Corridor Daylighting

Consider using linear toplighting to create bright, welcoming corridors.

Office & Restroom Daylighting

Consider using tubular skylights. They are a cost-effective way to obtain adequate diffused daylight into smaller spaces. They may also be provided with lights or fans and provide a well-insulated skylight option.

Appendix C: Applicable Codes and Regulations

Public Schools Facility Authority

In the year 2010, all Charter School properties will become the property of the State of New Mexico. Consequently, they must comply with the Public School Facility Authority (PSFA) Minimum Adequacy Standards. However, charter schools do enjoy certain exemptions from minimum adequacy standards. As this these exemptions are periodically modified, it is prudent to consult with the PSFA. The Adequacy Standards Planning Reference Guide and the NMAC 6.27.30 Statewide Adequacy Standards Are available at the PSFA website: <http://www.nmschoolbuildings.org/>.

Appendix D:

MISSION STATEMENT



The Cottonwood Valley Charter School seeks to foster and encourage each child's positive, total development based upon his/her individual strengths, skills, and learning style. The School's goal is to offer families a public-school choice in which children are encouraged to be curious and creative, and in which each child is allowed to advance at his/her own pace.

GOALS AND OBJECTIVES

- **Goal 1. Optimize Opportunities for Student Learning Objectives:**
 1. Limit school size to 170 students.
 2. Evaluate each student's academic skill level by subject area. As a general screening process to determine needs, evaluations will be conducted as part of the school entry process. Re- evaluations will be conducted at least annually, or more frequently as recommended by staff or requested by parent(s)/guardian(s).
 3. Establish a Personal Education Program for each student. The plan will be agreed upon by the student, parent(s), and teacher(s). It will specify the student's academic goals and will delineate the responsibilities of each party in achieving those goals.
 4. Group students according to skill attainment, not age, for academic subjects. Placement by skill level will be specific to each academic subject.
 5. Advance students through skill-level groups based on each individual's rate of subject mastery as determined by clear, rigorous performance standards. No student may progress to a higher skill level in any given subject area until mastery of the prior level has been achieved.
 6. Emphasize the use of emerging technologies and the development of the skills necessary for living in a global society, while developing each student's set of basic skills [reading, writing, and arithmetic].
 7. Employ a concept-based curriculum in which a topic is explored through a variety of academic approaches and skills, e.g. a unit on oceans may require students to use the following skills in exploring the topic: math, science, geography, reading, research skills, and report development.
 8. Provide real-world learning opportunities through hands-on educational experiences within the school setting and through community-based "world-as-classroom" collaboration experiences.
 9. Incorporate formal foreign language training at each grade level. Spanish will be taught to all students, with a second foreign language, e.g. French, offered for those with language skills equivalent to upper-primary level.
 10. Provide training in music, the arts, and physical and health education to supplement and support basic skills development.
 11. Encourage students to be curious and to ask questions, and then provide them the tools necessary to explore their world for answers. Encourage parents and staff to provide positive role-models for students through their own lifelong learning activities and their involvement in the school.

12. Offer an extended-day program to supplement and enrich the school's program in developing well-rounded, healthy, responsible, knowledge-seeking individuals.
13. Explore the potential advantages/disadvantages of offering an extended year or flexible scheduling program.

- **Goal 2. Create a Positive Learning Environment Objectives:**

1. Hold students to a high standard of behavior which stresses discipline and personal responsibility. The Discipline Policy, as set forth herewith and in the Student and Parent Manual, will be strictly enforced.
2. Hold staff, parents, volunteers, and other visitors to these same standards of behavior both at the school site and during school-sponsored off-site activities.
3. Require staff members, and encourage others involved with the school, to provide positive role models for students in terms of behavior, attitude, language, and dedication to lifelong learning.
4. Provide a physical environment that is safe, comfortable, well-maintained, and conducive to learning.
5. Establish a school culture which fosters academic pride and positive peer support.
6. Foster a sense of personal responsibility for the school among students, parents, staff, and other community members.
7. Provide programs, e.g. mediation training, to students, parents, staff, and other interested community members as a means of positive conflict resolution and individual growth.
8. Establish a mentoring program within the school linking students with staff and/or volunteers, and younger students with older students.

- **Goal 3. Create Strong, Ongoing Bonds between the School and the Community Objectives:**

1. Reaffirm and strengthen the ties connecting the school, community, and home in the development of children and the future of our community.
2. Establish formal partnerships with community agencies, businesses, and organizations to assist and encourage individual students and classes to explore various academic areas and to develop their sense of civic responsibility.
3. Establish a volunteer program to supplement staff-student interactions.
4. Establish a Service Learning Program to support the civic development of students.
5. Provide opportunities for intergenerational activities and programs as an important ingredient in a student's civic and educational development.

- **Goal 4. Establish Procedures for School Organization and Policy Making Objectives:**

1. Seek local school board waivers from local district policies as necessary to allow for innovation and flexibility. Seek waivers from State Board of Education regulations and certain areas of the Public School Code.
2. Operate through a separate, autonomous system of governance within the district in order to provide parents with a public-school education alternative, with a focus on the whole-child and his/her individual needs, strengths, learning styles, and pace of development.
3. Employ the most promising education reform methodologies and the emerging technologies and world view of the 21st Century.

4. Establish a Governing Council to make policy decisions. Council meetings and activities will comply with the Open Meetings Act.
5. Establish the position of **School Administrator**, responsible to the Governing Council, to fulfill the following roles: ...facilitate collaboration among the Council, staff, parents, and community ...make recommendations to the Council on programs, staffing, budget, and educational innovations ...act as liaison between the Cottonwood Valley Charter School and the State of New Mexico, Department of Education; the School's community partners; the Socorro Board of Education; the Socorro Consolidated Schools district office and school sites; and other interested local, state, and national agencies and organizations ...evaluate programs and ensure that all required reports are submitted on a timely basis ...oversee budgetary matters and grant funding activities ...act as disciplinary referral/resource to staff
6. Contract with staff to provide educational services to students within the philosophy and procedures of the School and with the approval of the Governing Council.
7. Submit annual written progress reports to the local school board, community and the State of New Mexico, Department of Education, including such information as: ...student performance ...teaching methodologies ...strategies for success ...community involvement ...special projects
8. Maintain fiscal records in accordance with local, state and federal regulations and laws, and submit fiscal reports as required by state and federal mandates.

- **Goal 5. Enhance Professional Development Objectives:**

1. Recognize staff as education professionals with the knowledge and skill to act autonomously within the guidelines of State mandates and the Governing Council.
2. Provide staff the freedom to be flexible and innovative in their classrooms while being accountable to the Governing Council.
3. Develop an individual performance and development plan for staff.
4. Provide staff with adequate time and budgetary support for classroom preparation, student evaluations, and professional development.
5. Identify and/or provide training opportunities for staff in subject-matter fields and innovative methodologies.
6. Encourage staff collaboration in using multi-person, multi- techniques in evaluating students, such as standardized tests, writing samples, portfolios of progress, special projects, and review meetings including all appropriate staff members, volunteers, and parents.
7. Foster staff's individual attention to students through small class size and strict disciplinary policy.
8. Facilitate staff collaboration and a multi-disciplinary approach to student learning.

Appendix E: Sample Class Schedules

Middle School Schedule 2005-2006

Mon - Tues - Wed - Thurs				Fri
6th	7th	8th		
8:15 LA 6 Mrs. Engler (5A)	Hist 7 Mr. Price (4B)	Sp 8 MWF Sra. Gutierrez (5B) LA 8 TTh Mr. Mandeville (5B)		LA 6 (5A) Hist 7 (4B) Sp 8 (5B)
9:15 LA 6 Mrs. Engler (5A)	Sp 7 MWF Sra. Gutierrez (4B) SCI 7 TTh Mr. Price (4B)	LA 8 Mr. Mandeville (5B)		LA 6 (5A) Sp 7 (4B) LA 8 (5B)
10:00 Sp 6 MWF Sra. Gutierrez (5A) MATH 6 TTh Mrs. Engler (5A)	LA 7 Mr. Mandeville (5B)	Hist 8 Mr. Hibbs (4B)		Sp 6 (5A) LA 7 (5B) Hist 8 (4A)
10:45 Lunch	Lunch	Lunch		Lunch
11:30 Math 6 MWF Mrs. Engler (5A) PE 6 TTh Mr. Hibbs	LA 7 Mr. Mandeville (5B)	Sci 8 Mr. Price (4B)		Fine Arts Program Music: Mr. Grogan Art: Mrs. Urban Drama: Ms. Van Fleet
12:40 Hist 6 Mr. Mandeville (5B)	Sci 7 MWF Mr. Price (4B) PE 7 TTh Mr. Hibbs	Math 8 Mrs. Engler (5A)		12:40 Math 6 LA 7 Sci 8 1:20
1:50 Sci 6 Mr. Price (4B)	Math 7 Mrs. Engler (5A)	LA 8 MWF Mr. Mandeville (5B) PE 8 TTh Mr. Hibbs		1:25 Hist 6 Sci 7 Math 8 2:05
				2:10 Sci 6 Math 7 LA 8 2:50

PE Schedule 2005-2006

	M		T		W		TH		F
8:15									8:30 PE 5
9:15									
10:00	Hist 8		Hist 8		Hist 8		Hist 8		Hist 8
10:45	Lunch		Lunch		Lunch		Lunch		Lunch
11:30	PE 4		11:30 PE 6		PE K		PE 6		Middle School Planning
12:20	PE 5		12:40 PE 7		PE 1		PE 7		PE 1
1:10	PE 2				PE 2				PE K
2:20	PE 3		1:50 PE 8		PE 4		PE 8		PE 3

Spanish and Fine Arts Schedule 2005-2006

M		T		W		Th		F
8:30 Sp 8				Sp 8				Sp8
9:15								
Sp 7				Sp 7				Sp7
10:00								
Sp 6		Sp 5		Sp6		Sp 5		Sp 6
10:45 Lunch		Lunch		Lunch		Lunch		Lunch
Sp K		Sp K	Art 2	Sp 5		Sp 4	Art 5	11:30 Fine Arts 6-8 — Middle School Planning
12:20			Music 5				Music 2	12:40
Sp 1		Sp 1	Art 4	Sp K		Sp 1	Art 3	
1:10			Music 3				Music 4	
		Sp 2	Art 1			Sp 2	Art K	Sp 2
2:00			Music K				Music 1	
Sp 4		Sp 3		Sp 3		Sp 3		Sp 4