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ABSTRACT

This document presents educational specifications for a new high school in Ridley school District in Pennsylvania. The specifications are offered by the school's administration and faculty. They address in detail the following areas: (1) exterior (including site and building exterior); (2) building interior; (3) classrooms; (4) department centers; (5) special areas (including such areas as administrative offices, attendance office, deans' offices, guidance office/career center, gymnasiums/locker rooms, reading/learning support center, student publications, auditorium, cafeteria, media center, etc; and (6) special curriculum areas (including such areas as computer labs, multi-purpose room, music, special education, etc). (EV)

EDUCATIONAL SPECIFICATIONS FOR THE NEW RIDLEY HIGH SCHOOL AS PREPARED BY THE SCHOOL'S ADMINISTRATION AND FACULTY

ENVISIONING THE NEW HIGH SCHOOL

The high school faculty looks forward to the opportunity to serve the Ridley School District in a modern, functional, flexible facility designed to meet the needs of a diverse student population well into the twenty-first century. The faculty recognizes that a new facility in both form and the functions it supports should be an environment that fosters high-quality teaching and learning with a strong emphasis on student needs. Also, the faculty looks forward to a facility that will foster interdisciplinary instruction and integration of learning experiences by providing easy access between and among allied departments as well as easy access to major resource areas and information centers, e.g., library media center, audio and video productions studio, and technology centers. In regard to technology, the new facility should have infrastructure in place that will facilitate the addition of emerging technologies, e.g., distance learning, e-mail ports for students, etc., over the next several decades. In addition, the faculty recognizes that the high school serves as one of the major cultural centers in the district and welcomes the allocation of space to support programs to enrich the lives of our students, parents, and community members: evening and weekend concerts, drama productions, recitals, induction ceremonies, and awards programs. Space allocated for these purposes should be aesthetically pleasing and facilitate formal and informal social interaction. Finally, we acknowledge the need to provide a facility that encourages healthful living and sound physical fitness and recommend that ample space be provided for adequate physical education and athletic facilities designed to encourage the broad participation of our students and community members.

EXTERIOR

SITE: The site should support a two- or three-story structure with no basement section located at a suitable distance from Morton Avenue to allow room for landscaping for aesthetic appeal and off-the-street parking for staff and students. Also, there should be a designated, secure area for buses to load and unload students. The building should be oriented so that the main entrance faces south and welcomes students, the staff and others into a large, bright gathering area. The natural flow of pedestrian traffic should be drawn to the main entrance.

BUILDING EXTERIOR: In addition to the use of low-maintenance, energy-efficient materials, the exterior should consist of sufficient windows and glass panels to provide bright, natural lighting for the interior of the building. Also, the general design of the building should deviate from the traditional, factory-like, box-like buildings that have been the dominate design over the past several decades. The number of outside entrances to the building should be within the fire code but kept to a minimum and easy to monitor. Courtyards or outside gathering areas, suitably landscaped, are recommended, particularly adjacent to the student cafeteria.

BUILDING INTERIOR

The interior of the building should consist of a large gathering area at the main entrance of the building with ample display cases and seating available for students, faculty and visitors. Gathering areas in the foyer of the auditorium and foyer of the main gymnasium are recommended also.

Wide, well-lit corridors and staircases to facilitate easy movement of students are highly recommended.° Corridor light switches should be inaccessible to students.

Classroom doors should be located so that they are not facing one another across a common corridor.

The building should be designed so that there are no dark, inaccessible spaces at the ends of corridors or under stairwells.

Sufficient restrooms and water fountains for both faculty and students should be available throughout the building.

Corridor walls should have mounted display cases or other provisions to display student work. Clocks should be mounted on walls in main corridors.

General service areas, e.g., cafeteria, gymnasium, auditorium should be located to provide easy access from all parts of the building, yet far enough away from the academic areas to eliminate noises and other distractions that could impede learning.

Deans' offices should be located in the academic sector to facilitate close proximity to students and teachers during the school day.

In lieu of corridor lockers, decentralized locker pods should be provided but located so as to minimize distraction to instructional program, yet easily monitored by the staff.

The interior of the building should be centrally air conditioned with the capacity to open windows as needed.

Carpeting should be used in appropriate areas, e.g., library, auditorium, etc.; however, it is recommended that, unless high-quality, durable, easily-maintained carpeting can be used, some other acoustical floor covering be used in the general purpose classrooms. Science, industrial tech, and foods labs, etc. should be tiled.

Pay phones for students should be located where they can be monitored and cause the least amount of distraction to the academic sector of the facility. (Phones should be used primarily during hours beyond the normal day in conjunction with athletic and extracurricular activities.)

CLASSROOMS

Sufficient classrooms are needed for a projected enrollment of 2,100-2,200 students. A homogeneous approach to classroom design should be used for most situations, however, particular departmental needs (as recommended by specific departments) might dictate variations to this general rule. Classrooms should be spacious with no less than 900 square feet per room, square in shape, and set up to facilitate movement of students, furniture, and equipment into varying configurations as the circumstances would dictate. Rooms should be equipped to facilitate visual, auditory and tactile learners while flexible enough to encourage collaborative work. Walls, ceilings and floors should consist of acoustical material so that interactive activities and use of audio, video, or other equipment will not impede learning in adjacent rooms. Other design features would include the following:

- sufficient areas on the walls for students and teachers to write and display work. Cork strips running the perimeter of the room and high-quality, white dry- erase boards or other surface applications are recommended.

- blackout shades or similar applications that would allow full view of projected images during periods of bright sunlight.
- sufficient electrical service, drops, and ports to handle technology needs well into the 21st century, enabling the teacher to reconfigure the room as technology needs would demand.
- two-way communication capability with the main office and other areas in the building.
- shelving, closet, and storage space (on the perimeter of the room).
- wall-mounted TV and/or video projection system for computer projection, videotape, and laser disc display.
- areas for (6-8) mobile workstations that can be brought into classroom as needed.
- recessed lighting and window access
- Telephone access to encourage direct and convenient communication with parents and to facilitate the use of "homework hot lines."

DEPARTMENT CENTERS

Department centers, located adjacent to the classrooms used by the respective departments, should be provided for all departments and designed to facilitate independent and/or collaborative planning. Centers should be carpeted and designed to include the following:

- desks/cubicles/carrels corresponding to the number of teachers in the department.
- conference area within the center for group meetings of two or more people.
- duplicating machine
- several workstations, fully networked with appropriate software loaded.
- lavatory facilities
- Computers for lesson preparation and access to information
- set up for coffee/tea service and electrical supply for the addition of microwave and refrigeration units.
- ample storage units and shelving for professional collection
- telephone service
- file cabinets
- Mounting surfaces on walls and one wall equipped with white board for presentations and mini-workshop use.
- TV with VCR for previewing and viewing tapes

SPECIAL AREAS

A large modern high school serves its constituents in a variety of ways and will need to allocate space (as indicated below) to handle functions that extend beyond the classroom.

ADMINISTRATIVE OFFICES

The high school administration should be housed in a suite located on ground floor near the main entrance to the facility overlooking the lobby outside the office. The suite should contain five offices with easy access from one office to another (principal and 2-3 assistants and possibly the athletic director...with separate access to the main corridor) in a horse-shoe design around space for a secretarial pool of 4-5 persons. Depending on need, the athletic director might be located in an office near in-door athletic facilities. Individual offices should be sized to accommodate a small conference table in addition to the primary work area. A conference room adjacent to the principal's office should be provided for meetings of ten to twenty people. The secretarial pool should be located for easy access to one another yet have sufficient space to ensure an ample measure of privacy. The secretaries should be separated

from the main-entrance area of the suite by a service counter with built-in cabinets for storage. Workstations for the secretaries should have sufficient space to accommodate equipment and provide work surfaces for paper and pencil tasks. The suite should be large enough to provide comfortable seating for visitors and sufficient space to house faculty mailboxes in a single, secure location. Also, a multipurpose area not visible to the visitors to the office should be included for storage, duplicating and other equipment, shelving, coffee/tea service. Space for lavatory facilities should be provided, also, as well as space for securing bank deposits and other important material.

ATTENDANCE OFFICE

A stand-alone attendance office, located adjacent to the main office and equipped with two phones and two computer stations, should be provided to handle all functions related to student accounting. The office should have a counter partition separating the office from the main corridor equipped with Dutch doors so that office personnel can interact with students from inside the office.

DEANS' OFFICES

Two offices on different levels should be provided in the academic sector of the complex. Each office should contain an waiting area outside the office with sufficient seating for visitors and space for office aides to work on assigned tasks.

GUIDANCE OFFICE/CAREER CENTER (as recommended by guidance personnel)

The Guidance Office should be a highly visible area to students, parents and other visitors (such as college representatives, social service agency workers, and career speakers). For students, it serves as an important source of information, and support. Thus, the appearance and location provide public relations with both students and the public. The suite should be carpeted and tastefully furnished. It needs to be located near a main entrance for easy access for people coming into the building and for evening sessions.
Counseling 6 - 7 private sound proof offices large enough to accommodate desk, computer worktable, personal library and files, and seating for 6 people.

Consulting and Conferencing Room with portable dividers for staff meetings, parent/teacher/counselor conferences, psychological testing, and therapists to work with students
(speech, vision, hearing)

Small group counseling 8 - 10 students per group

Record maintenance/clerical Records kept in locked file cabinets in locked room

- Need space large enough to house:
  - Cabinets with records of current students and 4 filing cabinets for "B" folders
  - Graduate records and withdraw records - 8 filing cabinets
  - Fax machine
  - 3-M Reader-Printer - cabinet contains microfiche records of all past graduates (need proper space for loading paper)
  - Copy machine
  - District printer (Pentamation)
  - Laser printer (networked to secretaries' computers)

Storage for supplies and personal articles

Secretarial 3 secretaries - need adequate work space for each secretary

Waiting area Far enough from counselors' offices to ensure privacy, but close enough to monitor students with sufficient space for students and parents to sit comfortably

- Area to store college catalogs / applications

Student Assistance Program Need meeting room for SAP Team and groups

- One private office for assessor and SAP coordinator

Large group conferences - space for college and career conferences

Career Center

- attached to Guidance Office with enough room for a class of twenty-five
- Three or more complete computer stations
- Equipped with round tables and display racks for books, magazines, and catalogues
- Small office for the coordinator

GYMNASIUMS/LOCKER ROOMS

Team rooms for boys' and girls' sports that can serve as locker rooms for visiting teams with easy access to athletic training area. Space allocated for locker rooms should facilitate securing some areas as needed. Privacy showers recommended in all locker rooms.

READING/LEARNING SUPPORT CENTER

This center should be located in the academic sector yet close to the main lobby and be configured to support individual, small and large group (25-30) learning-support activities of a remedial and developmental nature as well as in service workshops for the faculty. The room should be furnished with tables and other features consistent with the general classrooms.

STUDENT PUBLICATIONS

A preparation room, equipped with sufficient technology to handle designated functions, should be provided for each of the three publications: yearbook, newspaper, literary magazine.

AUDITORIUM (As conceived by Music and Theater Arts personnel)

The auditorium (amphitheater or pie-wedge shape) should be designed and sound-engineered as a music and drama performance area with the following features:

- designed in consultation with sound engineers and music faculty.
- fly space for scenery and wing space
- stage lighting with either a cat walk or pipes that can be lowered to hang and adjust lighting.
- communication system with head sets, speakers and access to back stage, Green Room (room off stage for actors to wait to enter and do quick changes), sound booth, under stage work rooms.
- costume and make-up shop for storage of costumes, dressing and making up.
- hanging microphones on the stage

- black curtains, including a back wall curtain, mid-stage traveler, mid-stage scrim, front traveler, main curtain (suggest emerald green)
- sky blue cyclorama on back wall
- in amphitheater, or pie-wedge shape.
- comfortable seating for 850-1000.
- lobby men's and women's lavatories for audience use.
- adjustability of panels and flexible, acoustical baffles so that the space can also work with the same degree of acoustical success while seating 450 near the stage.
- a large open stage space of 55'-40' dimensions, with wing space at both sides of 20x40SL and 20x40SR , and adaptable to the needs of all the performing arts (proscenium arch stage same width as current stage but deeper for space behind the back curtain)
- adjustable acoustical stage, ceiling, and auditorium panels for instrumental music, vocal music, and speech requirements.
- stage lighting of at least seventy foot candles, in a system in which lights can be adjusted without climbing ladders.
- quiet and adequate mechanical, ventilation, and lighting systems that do not exceed NC20.
- wooden stage floor.
- a pit below the stage of at least 70' wide by 20' deep dimensions.
- a Yamaha or Baldwin grand piano.
- an Allen or comparable electronic organ large enough to fill an auditorium this size with sound.
- with 9 sections of Wenger Tourmaster 6-foot Choral Risers (024E806) and 9 Fourth-Step Additions (024E707)
- 7 sections of Wenger Rollaway Acoustical Shells (061Z551)
- Wenger Portamaster Band Seated Risers in the following dimensions: 12 @4'x8'x8"(156B005); 12 @4'x'8'x16"(156B006); 12 @4'x8'x24"(156B007); 12 @4'x8'x32"(156B008).
- Wenger Conductor's Podium (1110302)
- built-in storage room in the wings for all risers, acoustical shells, podiums, and other auditorium equipment.
- water available in the wings for use with scenery painting.
- a state-of-the-art sound amplification system that can be run by students and to be chosen with input of music and drama faculty; sound and light booth in rear above audience.
- one electrically-operated projection screen mounted on the back wall of the stage and another mounted above and in front of the front-stage curtain.
- stage curtains to be designed and chosen by faculty stage manager.
- a large lobby outside the auditorium to be used as a pleasant gathering area and reception area before and after auditorium programs.
- a lobby ticket booth with window area large enough for three people to be selling tickets at the same time.

BLACK BOX THEATER

A theater, located near the academic sector and auditorium yet out of sound proximity to the music wing, similar in design to the current theatre 400, should be included in the new facility. Features of this facility should include the following:

- stage
- backstage area for props, crossing, storage
- Two large walk-in closets: one for theatre library of scripts, films, etc. and a second one for a dressing room, props, and make-up room.
- stage lighting
- powder room

- tables and chairs for teaching set up; chairs for audience to create a 100-seat theatre
- set up for filming and viewing tapes
- two entrances to room to allow easy access for audiences

CAFETERIA

The student cafeteria should be located in space away from but within easy access to the academic sector. Space should be large enough so that one cafeteria will be sufficient to handle the food-service needs of the students. With a projected enrollment of 2200 students and four lunches, a cafeteria that can accommodate approximately 600-700 students is recommended. Also, a courtyard with outside access to the cafeteria is suggested.

FACULTY DINING ROOM

Space should be provided in the new facility away from the academic sector for an aesthetically-pleasing room designed to serve as a faculty gathering and dining area. This area should be separated from the student cafeteria but close enough to the kitchen to provide direct food service to the faculty.

TECHNOLOGY LABS

In addition to labs in designated departments, three generic labs should be available in the academic sector for school-wide use and equipped with state-of-the-art technology. As the need for stand-alone labs decreases with the projected changes in technology, these rooms could be converted for use as classrooms.

LARGE GROUP INSTRUCTION

With the advent of coteaching, interactive and interdisciplinary instruction, and inclusion, the need for large spaces to support 60-70 students and house portable furniture has become very evident. Space for several such rooms should be provided in the academic sector of the complex. At least two of these rooms should be equipped with ceiling-mounted projection equipment for video, audio, and digital service. Also, all rooms should provide wall access to display examples of student learning and adequate storage to house student projects.

ATP CENTER

With the change in gifted education from enrichment to one which is curriculum-based, the need for a center to accommodate a variety of needs, ranging from administrative to instructional, has become evident. The center should provide sufficient space for two professionals and 10-12 students. Full technology access and phone service should be provided.

CONFERENCE/SEMINAR ROOMS

With the block schedule, there will be times when certain advanced- and special-needs classes will fall below the the normal class size. Also, there is a need to house small group sessions for a variety of purposes related to the academic and extracurricular program. Rather than allocating space in conventional classrooms for these functions, several seminar rooms located on all levels of the academic sector should be provided.

LIBRARY MEDIA CENTER (As recommended by the librarian)

The Library Media Center should be centrally located, closely aligned to the academic wings, and away from the noise and activity usually associated with the cafeteria and gym areas. If at all possible, the facility should be housed on one floor and one floor only; discipline/management issues are exacerbated when multiple floors are employed in a facility of this kind. It should offer an outside exit to support community use and/or after normal school hour times. It should contain bathroom facilities to make the area a true stand-alone unit as the need arises.
The center should include a flexible reference area that will will be able to grow as needed, a comfortable leisure reading space furnished with that goal in mind, a visual/audio area, and an area for computer use, with an attached formal classroom for direct instruction. Rather than one large, wide-focused room, small alcoves designated for particular work would be more appealing. A work area for media- center management issues should also be provided, as well as an office area for the director of the media center. Built in screens and/or white boards should be available for use by teachers and students.
While it should be truly functional in all its parts, the library should also speak to the aesthetic nature within each of its patrons. Carpeting, cool colors, open spaces, plants and/or trees, and display cases could add aesthetic quality to the scope of the media center while supporting the atmosphere for quiet research. It is important that shelving be chosen that will serve the needs of our regular collection as well as our oversized books, and that mobility be recognized as an important facet of the media center. While it will be wonderful to continue to have air conditioning, provisions must be made to also have windows that open.
Display areas should not only be part of the interior of the center, but some should open out into the corridors to enhance the interest of our students. Exhibitions of high learning should be able to be featured in these areas. Copiers, scanners, laminators and other project generating equipment should be located in the center so students and teachers can go from researching a project to actually putting the project together. The media center should be as comprehensive a facility as possible since these centers are known to be multi-dimensional in their use.

VIDEO/AUDIO PRODUCTION CENTER (As recommended by the coordinator)

The television studio/radio station should be centrally located and included in a library-media center area. It has been my goal to transform the current studio from a workshop to a facility which would serve as a source of pride for the district. Through the financial assistance of the building and the district, we have made great strides since my arrival in 1990.

I envision the new studio as a state-of-the-art facility which can serve both as an instructional area as well as a centerpiece for our school district cable channel programming.

From the ceiling to the floor, this will be a totally functional multi-camera production facility. A complete studio lighting grid would provide high quality lighting for a variety of productions. Multiple backdrops would help to transform the studio from a morning announcement news set to a student-produced weekly talk show. Each of the studio- configured cameras would be equipped with a computer-controlled teleprompter. An intercom system will allow for communication between the glass-enclosed video control room and the studio production crew and announcers.

A production switcher, audio console, preview monitors and videocassette recorders would make up the glass enclosed control room. Sliding glass doors lead into the studio to allow easy access to the rear of the production console. An observation level will permit the instructor to provide adequate supervision and assessment of a student production.

Several editing suites would contain two VCRs, editing controller, three 13-inch monitors and a production switcher. Soundproofing and proper ventilation will be essential for effective editing to

occur.
The video production class would meet in a standard sized classroom adjacent to the studio.

MEDICAL CENTER (As per recommendation of medical personnel)

There have been significant changes in the delivery of school health services provided within the school setting over the last decade. We are challenged to foresee the design of the school health center of the future based on the evolution of school health services over the last decade. The following is a list stating what we foresee in this future school health center and supporting why we need it.
An outside entrance to the health suite with double doors which will provide easy access to the school health suite for an ambulance and as the entrance point for the stretcher and/or wheelchair. This outside entrance would also enable the suite to be used for physical exams outside of regular school hours.

- Windows that are capable of opening to provide added ventilation to the suite.
- Multiple lighting sources and electrical outlets throughout the suite.
- A minimum of two bathrooms due to the volume of students visiting our office and a third bathroom that is handicap accessible.
- small sound-proof room for state-mandated hearing examinations.
- Two resting rooms with beds that are accessible for ambulance stretchers and wheelchairs.

- Storage space for medical and clerical supplies and the state-mandated medical forms for the entire district. Storage files for medical records of graduates that are held for five years following graduation.
- Shelving for an expanding professional reading collection and mounted white board
- Conference area for up to 20 people for ongoing meetings and in service of the district medical staff.

A treatment area for the care of lacerations and wounds, which should be configured as an island with multiple outlets and drawers on all sides to stock supplies and contain two sinks for the cleansing of the wounds so that two or more nurses can work simultaneously. A separate work and storage area for the stocking and administration of prescribed medications is recommended to facilitate the flow of traffic through the office.

- Office work area for the school nurses with space available for two desks, a computer set-up for one, possibly two computers and phone lines at each desk. Another desk area/work station is required for the office secretary located near the office entrance so she may privately meet and triage students.
- Two examining rooms that meet O.S.H.A. standards with multiple outlets and telephone service.
- Floor surface of the work area be tiled for easy clean-up, and that the personal work area of the school nurses be carpeted.

- Space to house the school physician with a desk, bookcases, examining table, conference area, and a sink.

SPECIAL CURRICULUM AREAS

These departments have particular needs that should be considered in designing a new facility. Personnel from the designated departments have made the recommendations which follow.

ACT DEPARTMENT

The ACT Department recommends that its three clusters to be housed together but not separate from the rest of the high school and located near the medical facility in the event of accidents. FCS and Industrial Tech, in particular, should be on the ground floor with parking and outside access directly into the departments to facilitate deliveries and use of the department for instructional needs such as car repair, nursery school drop-off, food service for brunches and luncheons.
Classrooms : In addition to features listed for other departments, classrooms should include the following:

- wall cabinets to store materials
- large tables with chairs carpeted except for foods labs and some Industrial Tech areas storage for large materials and students work in progress counter space and/or tables in addition to student tables connecting doorway to adjacent computer lab - "Window wall" with shade so students can work in lab and classroom and teacher can observe everyone lockable storage area sink in every classroom for projects and clean-up
- gound-fault electrical service

Computer Labs - The department has 5 labs which have been booked solid. Two additional, spacious computer labs are recommended. This area should simulate actual "real world" space as much as possible. Computer labs should have a separate instructional (desk or table) area where the whole class can assemble for instruction away from the computers. Possibly an instructional space can be put between two computers labs with access from each computer lab. Labs should be configured as follows: 25 student workstations (with large desks)

- multimedia/printing area with color scanners and printers (color and B&W)
- storage areas for computer supplies (disks, paper, ink, etc.)
- storage areas for educational materials (software, manuals, tutorials)
- display space for student work
- display space for important information
- white boards - essential to avoid chalk dust around computers (white boards must be of a good quality or they are too porous and quickly become unusable.
- TV/VCR mounted to wall
- overhead projector
- teacher workstation
- linked to TV, LCD panel or projection system
- able to control other workstations in the lab
- kill switch for student workstations
- conference area where students can work in teams on various projects or teachers can gather students for an off line activity
- intercom system
- hooks for students to hang book bags

Family & Consumer Science Needs
Four classrooms, two of which would be foods laboratories, one child development center and one multipurpose classroom. The two latter rooms would include kitchen units. The department needs to be located on the first floor with access to the outside and adjacent parking for the delivery of groceries and drop off of young children. Classrooms would include the general features listed for all classrooms with specific design features as follows:

Foods Laboratories : 1 teacher demonstration kitchen unit containing appliances, sink, outlets and demo mirror the full length of unit. 6 kitchen units/ student work areas each containing range,

microwave and sink. - All units should be visible to the teacher at all times. 2 dishwashers with permanent installation exhaust fans windows that open with screens A separate instructional/dining area that can be blocked off from kitchen area with outside access allowing people from the outside to enter dining area. Restaurant! large pantry and separate equipment room for labs that can be accessed from labs and from the outside so that teachers can get to pantry/storage without walking through classrooms storage space for student food products from one day to next. commercial refrigerator and freezer. no obstructions in room such as poles, partial walls, etc. deep double sinks in each kitchen one piece roll counter top laundry room connected to foods laboratories but in a separate room with proper venting

Child Development Center Laboratory facilities for preschool with outside entrance and adjacent outside enclosed play area for young children. (Check law for square footage for area with young children.) lavatory facility for young children Separate storage area for equipment, supplies and toys. Cubbies or hooks for young children's coats, etc. Instructional area attached to preschool lab. Observation room attached to preschool lab. Kitchen unit for snacks and food projects.

Multipurpose room Kitchen unit Large work tables Area for sewing machines Locked storage for student projects - Storage bins big enough to hold student supplies Lots of outlets.

Technology Education

The graphic-design and the computer-aided drafting courses were addressed in the computer room narrative. In addition to features listed for other classrooms and labs, special design features are indicated below.

Carpentry and Construction:

- A separate instructional /classroom area with a glass wall to view the lab area.
- Storage area for book bags in the classroom area.
- Wall space sufficient to set up demonstration areas for plumbing, electrical, masonry, drywall, and other related construction activities.
- Large door to the outside to move 8' X 8' sheds out of the room
- No obstructions in the room such as poles, part ion walls, etc.
- Storage racks for wood
- Storage for supplies, hand tool, power equipment and materials
- Exhaust fans
- Sinks and wash facilities
- Adjacent outside fenced-in area (blacktop of storage off large projects)
- Central dust collection system
- Noise absorbent ceiling

Manufacturing:

- A separate instructional /classroom area with a glass wall to view the lab area.
- Storage area for book bags in the classroom area.
- Large door to the outside to move 8' x 8' sheds out of the room
- No obstructions in the room such as poles, part ion walls, etc.
- Storage racks for wood
- Storage for supplies, hand tool, power equipment and materials
- Exhaust fans/dust collection system
- Sinks and wash facilities
- Storage room for large project storage

- Central dust collection system
- Noise absorbent ceiling

Engineering :

- A separate instructional /classroom area with a glass wall to view the lab area.
- Storage area for book bags in the classroom area.
- Large door to the outside to move 8' X 8' sheds out of the room
- No obstructions in the room such as poles, part ion walls, etc.
- Storage racks for wood
- Storage for supplies, hand tool, power equipment and materials
- Exhaust fans
- Sinks and wash facilities
- Movable benches
- Noise absorbent ceiling

Vocational Automotive
The high school has maintained an automotive program over the last several decades while responding to the needs of a significant population of students who have benefited from this program. By maintaining an on-site program, the district has saved substantial costs that would have been incurred if the district had to support this population at the area vocational-technical school. The high school administration recommends continuance of this program and that the new site include a vocational shop that meets the standards required by the Pennsylvania Department of Education.
ART DEPARTMENT

The Art Department at Ridley is growing each year. The art teachers believe the new high school should allow for plenty of working room and storage space to accommodate the number of projected students. Listed below are the needs for the Art Wing:

Classrooms
At least three classroom/studios, each with room for 10 large drawing tables and stools, plenty of lockable storage cabinets and closets. Two sinks with hot and cold water that come out from the counter like an island.
Floor to ceiling windows on one entire wall, that open and supply natural light.
An outside exit to a possible courtyard area for outside drawing and painting.
Two of the classrooms should open to the kiln/clay room.
A spray booth area should be placed in one of the rooms for the purpose of spraying fixative and clear-coat spray.
The back area in one art room should be larger to allow students space to work on easels.

Kiln room:
A room to house two kilns, not computerized, a electric potters wheels, 2 large tables for working on,wall to ceiling clay drying racks to hold all stages of clay work.
Proper ventilation for using the kilns.

Office and Storage Room
Accessible from the third classroom as well as the hallway. The door needs a window.
Plenty of shelving to hold the department resource material.
Locking closets for teachers personal items, coats eat.
A round table with chairs for conferencing
telephone service

teacher workstations, computers, printers (COLOR) and a copy machine.

Storage Closet
A closet large enough to hold all of our art supplies for the department, as well as student projects being saved in portfolios throughout the year.
Closet should have plenty of lighting and be accessible from the hallway only.

Display area
Minimum of 4 large, 3D display cases throughout the building but near the art wing.
A showcase that opens into one of the classrooms that is deep enough to hold 3D pieces.
Cork strips outside each classroom for displaying work.
Large 2D showcases in the art hallway and also near the front of the building.

Computer areas
Along with each teacher having a computer station, there should be an area in one of the classrooms for a student computer area.
The student computer area should have at least 4 Mac's
with color printers and enough memory to run the graphic software. A flat bed scanner is also needed.
This area should be on a wall or in a section away from the art tables and sink areas.

PHYSICAL EDUCATION

large gymnasium
one auxiliary gymnasium
swimming pool for aquatics instruction
large weight training center
cardiovascular fitness center
padded walls in the gymnasiums
central storage area for physical education equipment
locker rooms with all large lockers (no locks)
locker rooms, offices, gyms, storage all on the same level
separate offices for HPE teachers and coaches
dividing walls in all gyms (divides into fours)
capability for sound system in the gymnasiums
water fountains in gymnasiums
ropes and bars in gymnasiums
limited access to all gymnasiums
showers with some individual stalls
PE offices with computer technology
raised indoor track in one of the gymnasiums

MUSIC

The National Standards in the Arts suggest that one music course other than band, orchestra, and chorus be offered for each four hundred students in the school. We are in compliance in offering Music Theory I, Music Theory II/III, Modern Music, and Guitar, in addition to Band and Chorus for our population of 1600+. As the population increases to the projected 2200-2300, however, we will need to offer more music courses. In addition, when enrollment justifies, a school should offer two bands or two choruses, and also offer an additional performing organization for each three hundred students in the school. Beginning, intermediate, and advanced choral and instrumental instruction should be available.
When the high school population rises to the projected numbers, and when more music courses are

offered, the music staff will need to increase proportionately.
With these considerations in mind, we find the following facilities necessary to deliver instruction:
a) 2 rehearsal rooms
b) 1 classroom
c) 1 piano/electronic music lab
d) 6 practice rooms, or 4 on each floor, if the music department is constructed on two floors
e) 2 ensemble rehearsal rooms
f) 2 large storage rooms for music library, school instruments, uniforms, student instruments in lockers, equipment, and space for repair and maintenance of music and instruments. 1500 square feet for instrumental storage and 900 square feet for choral storage.
g) 2 music offices, one next to each rehearsal room
h) marching band practice field
i) large lavatories to double as makeup rooms/dressing rooms near the music rooms
j) 1 auditorium to seat 850

Music rooms have specific and unique requirements so that they support the functions of music instruction and performance.

SCIENCE (LABORATORIES)

The Science Department at Ridley High School is in a time of transition as far as curriculum and its' delivery is concerned. Most courses are moving away from the traditional teacher-student lecture experience and moving into a more student centered lab and activity experience, very similar to the new BSCS Biology approach. This now changes the needs of teachers and the students within the classroom environment.
The department is finding that the traditional configurations of our classrooms can often be quite burdensome especially when trying to use a nontraditional approach to teaching/ learning. The department sees a need for larger classrooms, but not just for the sake of having a larger room. We are moving away from the traditional one-day-a -week lab approach. It is not uncommon to do 3 or 4 lab activities per week built right into the extended period curriculum. This extended period (Block scheduling) has allowed us the ability to move these experiences right into the curriculum where they "fit", not put into the course artificially because it is a "lab" day. As a result, classrooms are now multi functional, serving as both classroom and lab room in one. Thus a need in these larger rooms for lab pods or areas for students to have lab experiences.
Several science teachers have spoken about a central area in each classroom to gather the students in a group and placing pods for lab experiences against the walls of the room. Others have shown an interest in a central teacher station and lab pods surrounding the station . Still others have seen a need for these pods to be placed in the rear of the room with additional student seating directly in front. Each discipline in science sees the need for different room arrangements according to the individual curriculum involved. The teachers of the different curricula also see different needs within these lab pods. Sinks, the availability of gas, technology hook-ups with the ability to network, large storage areas, chemical hoods, and ample electric outlets are all requests that have been made with these labs pods in mind.
Additionally, facilities required include a small roof-located greenhouse, a planetarium facility and a roof level observation site for day or night astronomy observations.

SPECIAL EDUCATION

- Centrally located areas for easy access by all departments and offices
- Lockers of I.E.P. students close to classroom with an option of keylock for students unable to use

combination locks
- Classrooms
  - 4 regular classrooms -two for part-time and two for itinerant
  - Locking storage areas in each class as well as shelves and cubbies for individual student use
  - Classrooms would have to be on ground floor unless an elevator is available
  - Desk/chair combinations (desk top 18 x 24 inches)
  - Large tables (that seat 6) for projects
  - 4 computers per class with CD Rom and Internet Access
  - Classroom large enough so that groups of students can work on separate projects
  - Bulletin boards and cork strips for displaying student work
  - Chalk boards and white boards

- One large group meeting room for projects and large group activities
- Lab room with several kitchen set-ups, including stove, refrigerator, washer and dryer in order to teach life skills (current scheduling limits our use of existing kitchen facilities in the FCS Department)
- Phone jack in part-time classes to teach life skills that require use of the telephone
- Department office with carpeting with adequate storage and shelving in close proximity to special education classrooms with telephone access, computer w/ printer and fax capabilities, copier
- 2 small, carpeted conference rooms with round table for 6-8 people to hold IEP and parent meetings

- *Code Revision:* Energy code revisions gradually increase the efficiency standards that all buildings must meet. Thus, as overall practice improves, the code baseline can be moved toward greater efficiency.

State and National Energy Codes

There is a wide variety of energy codes and standards. These range from national model energy codes, which must be adopted by a state or local jurisdiction to have the force of law, to locally developed and adopted standards.

EPAct (discussed above) has also had the effect of bringing mandatory lighting efficiency standards to many states that previously had none. There are three national model energy codes that are widely used by states and local jurisdictions. ASHRAE/IESNA Standard 90.1–1999, and its older edition Standard 90.1–1989, were developed by the two major professional societies concerned with lighting energy efficiency. These standards have been adapted and adopted by a large number of states and local jurisdictions across the country, with some local amendments and refinements added along the way. The third major national model energy code, the International Energy Conservation Code or IECC, adopts the ASHRAE/IESNA Standard 90.1 by reference, plus it provides a simplified compliance path with equivalent energy efficiency.

A transition is currently underway among the jurisdictions that have adopted energy codes based on Standard 90.1, from the older and outdated 90.1–1989 to the updated 90.1–1999. In developing the 1999 standard, ASHRAE/IESNA based the lighting efficiency requirements on current standard lighting technologies, such as T-8 fluorescent lamps with electronic ballasts. This resulted in significant reductions in lighting power allowances compared to the older 90.1–1989 standard, which was based on T-12 lamps and magnetic ballasts. Similar improvements in lighting efficiency were applied to the other types of available lighting equipment.

In adopting local ordinances to establish energy codes, jurisdictions often develop local amendments. For example, the state of Colorado adopted the 90.1–1989 standard, but adjusted the lighting control requirements, and added a minimum luminous efficacy requirement that effectively rules out widespread use of the old T-12 magnetic-ballast fluorescent luminaires.

In addition to energy codes based on the 90.1 family of model standards, a number of states have developed their own lighting efficiency standards. Because of its large population and construction volumes, California's Title 24 Energy Efficiency Standards for Residential and Nonresidential Buildings have produced very substantial energy savings over the years, and have lead to relatively high standards of energy efficient lighting design compared to many other regions of the U.S. Other states, such as Washington, Oregon, Minnesota and New York, have also developed their own energy codes; in some cases starting from scratch and in other cases creating local variations of energy codes developed elsewhere. It is too large a subject to attempt a detailed comparison of all these codes, but they tend to have several characteristics in common.

The following tables compare the lighting efficiency requirements of the 90.1–1999 standard to the 1995 and 1998 California standards. The comparisons are in terms of allowed lighting power density in W/ft². The allowed lighting power can be determined for the whole building (Table 3-5) or on a space-by-space basis (Table 3-6). The space types in Table 3-6 are an example for just one building type, schools.

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