

### 3. Design Process Guidelines

The District utilizes a two-part process to plan, design, and deliver its projects. The first part involves planning, conceptual design development, and community input. The second part involves fully documenting design and constructing the project. What follows in these *Educational Specifications* are specifics related to the first part of this process.

#### planning and design phase

In order to achieve a project rooted in the District's mission and vision and, ultimately, realize a project's fullest potential requires rigorous planning as a first step. Absent this level of effort, the finished facility risks not meeting the needs of the occupants for whom it was built.

Prior to engaging a design professional, District staff will have defined the project budget, schedule, and proposed scope in order to establish the parameters within which planning and conceptual design shall occur. These will be provided at the outset and can be relied upon in good faith. The objective of the planning process, therefore, is to bridge the divide between the broad parameters provided and the specific information required for the Board to consider approval of the project.

It is critical that central office and building-level leadership participate in the process – either directly or by proxy – to inform decisions. Likewise, it is important that those who will be impacted by the project – students, teachers, administrators, and the community – be kept apprised of progress and be given opportunities to respond, too.

Architects and engineers are encouraged to collaborate with a professional educational planner to introduce broad concepts to inform the process. These might include new methods for instruction and delivery, educational best practices, case studies and examples from further afield, or any number of things intended to re-focus efforts and help ensure that the conversation is moving the District forward rather than defaulting to the past. Doing so is also intended to help ensure that the design of the facility – new or renovated – is fully leveraged. Architecture is a powerful medium, and the opportunity to leverage it to enhance teaching and learning is too often missed.

The planning process takes place between the District's annual facility updates. Meetings with the Steering Committee should be scheduled at their convenience within the mutually established time frame. Meetings with the community should be scheduled in the evenings on weekdays to allow greatest participation.

It is important to allow for some means for keeping the Board apprised of progress and direction. That could mean including a member of the Board on the steering committee whose responsibility it is to keep the rest of the Board up to date or it could mean some sort of periodic but regular report to the Board in whole or in part.

Ultimately, the goal of this phase is to clearly establish expectations, ensure that the community is apprised, and establish a basis for design. As noted previously, the district recommends collaborating with a professional planner to help ensure that this process – and ultimately the project – is leveraged to its fullest.



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The particulars of this phase will vary from project to project and should be tailored accordingly. Depending on the scope and scale of the project, it might include the following meetings with the following groups:

1. **Steering Committee.** The design professional will be guided by a small group from the District comprised of **board members and** facilities, central office, and building-level leaders. The steering committee will be responsible for either providing required information or access to key individuals who can.
  - a. **Steering Committee meeting 1 (Board meeting).** The purpose of this meeting is for the District to define for the design professional the project parameters and convey related baseline data including, but not limited to, demographic analysis; capacity requirements; existing conditions including, but not limited to, site and geotechnical explorations, hazardous materials identification, structural investigations, utilities determinations, and technology requirements; the district's objectives for the project including any sponsors or partnerships; alignment with the district's mission, vision, and strategic plan; and budget and schedule requirements. Expectations for deliverables should be confirmed **with involvement from the Board at an open meeting of the Board.** A calendar of milestones and meeting dates should be determined.
  - b. **Steering Committee meeting 2.** After establishing the parameters and confirming expectations for deliverables, data must be collected and synthesized. This is necessarily an iterative process that will involve meetings with the steering committee to glean information about everything from the specifics of the curriculum as a whole to the particulars of individual programs as well as the special needs of the community. To the extent that the steering committee cannot provide the appropriate level of detail required, they will designate a proxy with whom the design professional should meet to obtain it.

It is critical that enough information be gathered that a narrative can be written and a plan can be drafted of the project that will respond effectively to the needs of the end-users now and in the future. For each program/space identified by the steering committee and listed on the room data spreadsheet, a separate datasheet should be created to collect information related, but not limited to, storage needs, power and data requirements, casework, furniture, fixtures, equipment, and special considerations. The inclusion of design specialists in these meetings to ask specific questions related to a particular discipline is required, but care must be taken not to allow the discussion of a particular piece of equipment, for instance, to overshadow conversations about other critical matters. These datasheets, which should be approved by the steering committee after input is complete, will serve as the basis for design.

The input meetings should lead directly to the creation of the program narrative, program data matrix, and room data sheets that will form the basis for design. The Steering Committee must approve each of these prior to beginning design.

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- c. **Steering Committee meeting 3.** After the program narrative and room data matrix have been completed and formally approved, the design professional shall synthesize the information in preparation for a design charrette with the Steering Committee and other key stakeholders whom the committee may select. Prior to the meeting the design professional shall also have reviewed the baseline information provided by the District, studied applicable codes and regulations, investigated the site, met with consulting engineers to discuss possible systems, and be prepared to share an overview of the design-related issues discussed by the design team.

The purpose of this initial charrette is to put relative form to the programs and spaces that have been identified and begin the process of amassing conceptual designs. Programming and adjacency diagrams should be developed and confirmed.

Subsequent design charrettes should occur at appropriate intervals in between which the design team should take the information created, study it, and develop it further. This should involve collaboration among the entire design team after which proposed solutions should be vetted with the Steering Committee and their appointees.

The design charrettes should lead directly to the creation of one of more conceptual site plans and conceptual floor plans.

- d. **Steering Committee meeting 4.** The Steering Committee shall select and formally approve a conceptual site plan and conceptual floor plan.

Upon receiving a clear directive, the design professional shall organize and facilitate charrettes aimed at further refining the site and floor plans in conjunction with building elevations. Subsequent design charrettes should occur at appropriate intervals in between which the design team should take the information created, study it, and develop it further. This should involve collaboration among the entire design team after which proposed solutions should be vetted with the Steering Committee and their appointees.

The design charrettes should lead directly to the creation of one of more concepts for building elevations for the select plan. They should also result in the development of a conceptual interiors package.

- f. **Steering Committee meeting 5.** The Steering Committee shall select and formally approve an elevation concept and confirm the interiors package. Upon receiving a clear directive, the design professional shall refine the elevations and continue along several parallel paths to complete conceptual design including, but not limited to, drafting a project narrative (not to be confused with the program narrative drafter previously) and creating an energy model to be analyzed in conjunction with specific energy targets. Color perspective renderings shall also be completed.

- g. **Steering Committee meeting 6.** Prior to completing the planning and conceptual design phase and issuing the project for approval, the Steering



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Committee must review and approve the project narrative, energy analysis, and color renderings.

Upon receiving a clear directive, the design professional shall prepare a package that includes all of the deliverables as indicated below in 'Conceptual Phase Documents for Board Approval'.

2. **Conceptual Design Documents for Board Approval.** The design professional shall work with the members of the Steering Committee to explore issues, refine options, and establish priorities. The District staff and design professional shall present to the Board for approval program data including, but not limited to, demographics, capacity, existing conditions, District objectives for the project, contracting methodology, estimated budget and schedule requirements along with conceptual floor plans, elevations, and finish selections that have been developed.

Regarding the project scope, it should be defined with as much detail as possible in order to clarify expectations. However, the tendency to hone in too quickly should be avoided since this will limit the number of issues identified, considerations given, and options available. As with any creative process, the planning



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process must be allowed to diverge before eventually converging upon an idea. And while the design process should begin with the end in mind, the planning phases should not be so constrained.

The goal of the planning and conceptual design phase is to produce narratives and illustrations that define a project in sufficient detail that the scope of the project is easily understood, budgets and schedules can be confirmed, approvals can be granted with justification, and, ultimately, production of contract documents can advance seamlessly.

Required deliverables for the conceptual design documents include, but are not limited to, the following:

- a. **Capacity calculations.** Refer to the section on 'Capacity Calculations' for the formulas to be used to determine the design capacity.
- b. **Program narrative.** Fully describe the educational program being supported and the appropriate design responses. At a minimum, include information about general instruction and delivery, special education requirements, elective and auxiliary programs, athletic programs, administration, and food services. Include information drawn from the section on 'Principles of School Planning.' Include information about site and the community within which the facility will be set. Include aspects that make the program, population, site, and/or community unique and describe ways in which the facility can reinforce, capitalize upon, or otherwise highlight these features in support of the educational program. The narrative should attempt to tie as many aspects of the program to the District's mission, vision, and strategic plan.
- c. **Program data matrix.** List the types of, quantities, and sizes of the spaces to be included in the design along with estimates for unprogrammed spaces and infrastructure in order to determine the SF of the facility. An example spreadsheet is provided below.
- d. **Room data sheets.** List separately the program and user requirements for each of the programs/spaces identified by the Steering Committee and/or listed on the program data matrix. Document information related to, but not limited to, storage needs, power and data requirements, casework, furniture, fixtures, equipment, and special considerations. Document any local, state, or federal regulatory requirements that may apply to the program or space. Note the relationship between the program/space and any others that may be relevant (e.g. the kitchen is related to the cafeteria, serving area, receiving area, garbage removal, etc.). Involve design specialists, equipment representatives, and industry partners as necessary to obtain sufficient detail.
- e. **Programming and adjacency diagrams.** Develop diagrams that illustrate and make plain the relative size of spaces and their relationships to one another.



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- f. **Project narrative.** Fully describe the building program including, but not limited to:
  - i. **codes and regulations** – identification of any having jurisdiction
  - ii. **site** – requirements for access, circulation, parking, utilities, landscaping, wetlands mitigation, and lighting;
  - iii. **foundation and substructure** – performance requirements for foundations and excavations; subsurface conditions; special problems; and foundation systems;
  - iv. **superstructure** – performance requirements floor, roof, stairs, and other structural elements; building and structural modules to be used, identification of systems for floors, roofs, stairs, and the superstructure; and sizing of key elements;
  - v. **exterior closure** – restrictions on materials; performance requirements, for walls, doors, windows; wall systems; insulation; water-proofing; envelope elements; and any key details;
  - vi. **roof** – performance requirements; type; pitch; systems; and materials;
  - vii. **interior construction** – performance requirements for partitions, finishes, and specialties; finishes; wall/partition types; floors; and ceilings;
  - viii. **vertical circulation and conveying systems** – performance requirements for conveying systems; justification for need; and required sizing of means of egress and exits;
  - ix. **mechanical systems** – performance requirements for plumbing, HVAC, and fire protection; identification of typical and special systems; space allocations for mechanical areas; approach to controlling passive solar heat gain; and distribution concepts for service, plumbing, and mechanical systems;
  - x. **electrical systems** – performance requirements for lighting and electrical systems; identification of typical and special systems; lighting quality and character; approach to day-lighting; approach to controlling glare; space allocations for electrical systems, distribution concepts for service and power; and
  - xi. **equipment** – performance requirements and identification of typical and special equipment.
- g. **Site plan diagrams.** Illustrate plans for access, circulation, parking, utilities, landscaping, wetlands mitigation, lighting, and other considerations relative to the site
- h. **Conceptual floor plans.** Illustrate floor plans at each level at 1/16"=1'-0". Illustrate plans for typical classroom and office 1/4" = 1'-0". Illustrate plans for special spaces at 1/4"=1'-0".
- i. **Conceptual elevations (interior and exterior).** Illustrate exterior elevations on all sides at 1/16"=1'-0". Clearly identify materials. Illustrate interior elevations at 1/4"=1'-0" at key places within the building to show design intent. Clearly identify materials.
- j. **Conceptual interiors package.** Develop a color palette. Develop a materials palette. Develop a preliminary finish board showing options for interior and exterior finishes including, but not limited to, floors, interior walls, exterior walls, roofs, and glazing.

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- k. **Energy model.** Establish an energy budget in kBtu/SF/year. Construct an energy model and perform a preliminary analysis.
- l. **Renderings.** Illustrate the project using at least one exterior perspective rendering of the front of the facility and two interior perspective renderings. Regarding the interior renderings, illustrate an “impact” space like the lobby, media center, or community room along with a typical classroom. Renderings should be in color.

When developing the architectural floor plans and elevations, the architect is required to utilize BIM technology. Refer to the section on ‘BIM’ for further clarification.

**Community presentation.** Once the conceptual design has been approved by the Board, the District staff and design professional shall meet with the community to outline the project and convey related baseline data including, but not limited to, demographics, capacity, existing conditions, and District objectives for the project along with the conceptual floor plans, elevations, and finish selections that have been developed.

#### production and construction phase

Upon approval of conceptual design by the Board, a project will move into the design production and construction phase. The District utilizes two methods for project delivery – Design-Bid-Build and Design-Build.

##### Design-Bid-Build

The District will select a design production team following procurement guidelines.

The design production team shall produce contract documents in accordance with the requirements set forth in the District's Architect's Agreement. Upon completion of the construction documents, the project will be bid by District staff. The lowest, responsive contractor will be recommended to the Board for approval. Once approved, the District will execute the District's Contractor's Agreement with the contractor and begin construction. This method will typical be used on new facilities.

##### Design-Build

The District will select a design design-build team following procurement guidelines.

The District will negotiate an agreement with the design-build team for Board approval. Once approved, the District will execute the District's Design-Build Agreement with the design-build team and begin design/construction. This method will typical be used on additions and renovations on existing sites.

**CM @ Risk language to be added.**