33 Years Focused on K-12

125 Projects

50 Elementary Schools

75% Renovation/Additions (Most Phased/Occupied)
MSBA/IPSWICH PROCESS
FEASIBILITY & SCHEMATIC DESIGN

February '16 through '17 (Full Year)

newvistadesign
Envisioning 21st Century Schools © 2015

Perkins Eastman | DPC
### MSBA/IPSWICH PROCESS
#### FEASIBILITY & SCHEMATIC DESIGN

<table>
<thead>
<tr>
<th>Task</th>
<th>JANUARY</th>
<th>FEBRUARY</th>
<th>MARCH</th>
<th>APRIL</th>
<th>MAY</th>
<th>JUNE</th>
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<th>AUGUST</th>
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<td>MSBA Project Kick-Off</td>
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<td>Select 1 (4) Options</td>
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</table>

**Many Key Decisions March-May**

- Site, Size/Config, Program, Opt's
- MSBA
- Refine/Eval.4 Options
- MSBA
- Detailed Design/Scope of 1
- MSBA
January - February
- Info Gathering (Existing Cond’s & Program)

February-March
- Educ. Visioning (Work Shops & Forums)
- Establish Goals & Objectives

March
- Develop Educ./Site Programs
- Select Grade Configuration

April
- Approve Program & Site
- Develop Planning Options

May
- Refine Planning Options
- Select (4) Preferred Options

June (Submit PDP Report)
INFORMATION GATHERING
GETTING TO KNOW IPSWICH
### Feasibility - Comparison Matrix

<table>
<thead>
<tr>
<th>Site Considerations</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from existing school</td>
<td>0</td>
<td>2.9 mi</td>
<td>4 mi</td>
<td>.8 mi</td>
<td>2.4 mi</td>
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<tr>
<td>Overall Site Size (acres)</td>
<td>6.8</td>
<td>17.23</td>
<td>14</td>
<td>10</td>
<td>27.3</td>
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<tr>
<td>Site acquisition / legal issues</td>
<td></td>
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<tr>
<td>Regulatory restrictions</td>
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</tbody>
</table>

#### Community Values

1. Location
2. Traffic
3. Recreational Field Space
4. Re-use of Facilities/Playgrounds
5. Abutment Impact

#### Educational Criteria

1. Proximity To Students
2. Outdoor Learning Opportunities
3. Municipal Learning Opportunities
4. Optimal Plantation, 4 of 24, central
5. Ed. Impact During Construction
6. Include ECE and/or Central Admin

#### Capital & Operational Cost

1. Site / Utility Infrastructure
2. Site Acquisition
3. Busing / Transportation
4. Phasing / Swing Space Cost
5. Maintenance / Operation
6. Energy
7. Staffing
**GRADE CONFIGURATION ASSESSMENT**

**LOOKING AT THE IMPLICATIONS (FOR IPSWICH)**

### Factors to Consider
- Travel (Cost and Time)
- Parent Involvement Increase/Decrease
- Size of Each Grade Level
- Number of School Transitions
- Interaction Opportunities Among Grades
- Ipswich Specific Goals/Concerns

### Research on Configuration
- No Definitive Answer on Most Effective
- Studies Focus on Quality of Environment, Teaching, Transitions & Parent Involvement

### Advantages of K-2 and 3-5
- Consolidates Grade Level Resources
- Students Feel Safe With Similar Age Group
- More Opportunities Among Grade Levels

### Advantages of K-5
- More Convenient for Families/Involvement
- Builds Familiarity & Communication Spans
- Less Transition Between Schools
- More Opportunities Between Grade Levels

---

**Implications of Enrollment Options**

<table>
<thead>
<tr>
<th></th>
<th>K-6, 360 Students</th>
<th>K-6 Configuration with Two K-6 Wings, 670 Students</th>
<th>Unified District, Two Grade 2-6 Wings, 750 Students</th>
<th>Unified District, Grade 2-6 with Grade 2-4 &amp; Grade 5-6 wings, 750 Students</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Quality Classrooms with Acoustic Privacy</strong></td>
<td>62% of students</td>
<td>100% of students</td>
<td>100% of students</td>
<td>100% of students</td>
</tr>
<tr>
<td><strong>ADA Compliant Classrooms</strong></td>
<td>62% of students</td>
<td>100% of students</td>
<td>100% of students</td>
<td>100% of students</td>
</tr>
<tr>
<td><strong>SE-Specialized Programs</strong></td>
<td>BB &amp; AIMS would likely move to either CF or WW</td>
<td>BB, AIMS, &amp; ILC all in same K-6 building</td>
<td>BB, AIMS, &amp; ILC in new building; early childhood programs will need to be developed at CF</td>
<td>BB, AIMS, &amp; ILC in new building; early childhood programs will need to be developed at CF</td>
</tr>
<tr>
<td><strong>Zoning (Socio-economic balance)</strong></td>
<td>Can address via required redistricting</td>
<td>Can address if distancing occurs (optional in this model)</td>
<td>Can address via required redistricting</td>
<td>Will be addressed by default</td>
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<tr>
<td><strong>Zoning (Equity in Specialized Programs)</strong></td>
<td>Unaddressed</td>
<td>Partially addressed</td>
<td>Fully Addressed</td>
<td>Fully Addressed</td>
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<tr>
<td><strong>Zoning (resolving the “islands” in the zoning of apartment complexes)</strong></td>
<td>Unaddressed</td>
<td>Unaddressed</td>
<td>Addressed</td>
<td>Addressed</td>
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<td># of Enrollment Zones</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<td><strong>Redistricting</strong></td>
<td>Some students currently in WW &amp; CF would attend All students are redistricted into 2 town-wide schools</td>
<td>All students are redistricted into 2 town-wide schools</td>
<td>All students are redistricted into 2 town-wide schools</td>
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<tr>
<td><strong>ELL Newcomer Program</strong></td>
<td>Not feasible</td>
<td>Feasible at new building, not at CF</td>
<td>Feasible in all schools</td>
<td>Feasible in all schools</td>
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<tr>
<td><strong>Transportation</strong></td>
<td>No additional costs based on whether redistricting occurs</td>
<td>Additional $220,000/year</td>
<td>Additional $220,000/year</td>
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<tr>
<td><strong>Operational Savings (including transportation)</strong></td>
<td>$0 (and additional costs to maintain Fort River)</td>
<td>$400,000-$500,000/year (depending on redistricting/transportation)</td>
<td>$475,000/year</td>
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<td><strong>Peer Mentoring</strong></td>
<td>Possible across 7 grade levels</td>
<td>Possible across 6 grade levels</td>
<td>Possible across 5 grade levels</td>
<td>Possible across 5 grade levels</td>
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<tr>
<td><strong>Teacher Collaboration</strong></td>
<td>Same as current model</td>
<td>Additional job-alike collaboration opportunities for staff at new school; not at CF</td>
<td>Additional job-alike collaboration opportunities for all staff</td>
<td>Highest levels of job-alike collaboration for all staff</td>
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<td><strong>Crocker Farm Implications</strong></td>
<td>Remains a PreK-6 with redistricting</td>
<td>Remains a PreK-6 with possible redistricting</td>
<td>Becomes PreK-1 Early Childhood Center</td>
<td>Becomes PreK-1 Early Childhood Center</td>
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Programming & Design
Translation of Needs & Objectives

<table>
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<tr>
<th>Core Classrooms</th>
<th>23,300 sf</th>
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<tr>
<td>Kindergarten</td>
<td>4 per Grade</td>
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<tr>
<td>1st-2nd Grade</td>
<td>4 per Grade</td>
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<tr>
<td>3rd-5th Grade</td>
<td>4 per Grade</td>
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<table>
<thead>
<tr>
<th>Special Education</th>
<th>5,825 sf</th>
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<tr>
<td>Full Size Room</td>
<td>1 (SPED) 1 (LITERACY)</td>
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<tr>
<td>Half Size Room</td>
<td>1 (OT/PT) 2 (IEP/ELL)</td>
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<tr>
<td>Learning Center</td>
<td>1 (at K-2) 1 (at 3-5)</td>
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<tr>
<td>Office/Conference</td>
<td>2 (ADMN) 4 (at 3-5)</td>
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<tr>
<td>Quiet Rooms</td>
<td>1 (at K-2) 1 (at 3-5)</td>
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<tr>
<td>Breakout</td>
<td>1 per Grade</td>
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</table>

| Art/Storage       | 1,150 sf |
| Music/Ensemble    | 1,575 sf |
| Media Center      | 2,875 sf |
| Gymnasium         | 6,000 sf |
| Office/Storage    | 300 sf   |
| Cafeteria/Stage   | 4,675 sf |
| Kitchen/Storage   | 2,153 sf |
| Staff Lunch       | 500 sf   |

| Admin/Guidance    | 2,790 sf |
| Nurse’s Suite     | 510 sf   |
| Custodial/Storage | 1,865 sf |

x 1.5

53,518 NSF

80,277 GSF
Winthrop and Doyon Elementary School
February 10, 2016

Educational Visioning

newvistadesign
Envisioning 21st Century Schools

Perkins Eastman \\ DPC
Today’s Agenda

• Visioning Overview and Introductions (15 min)
• Priority Goal Setting for the new/renovated elementary school (25 min)
• 21st Century Schools Presentation (25 min)
• 21st Century Learning Goals Activity (20 min)
• Grade Configuration Considerations (30 min)
• Closing and Next Steps (5 min)
The Visioning Process

- Core Ed Leadership Team
- Design Working Group
- Larger Community

- Learning Goals and Best Practices
- Design Patterns & Guiding Principles
- Key Spaces, Adjacencies & Conceptual Design Directions

Perkins Eastman \ DPC
• EWG Workshop ONE – February 29, 2016
• Community Forum TWO – March 10, 2016
• EWG Workshop TWO – March 14, 2016
• Faculty Workshop – March 17, 2016
21st Century Teaching and Learning

The Three Rs
- Reading
- Writing
- Arithmetic

The Four Cs
- Critical Thinking
- Communication
- Collaboration
- Creativity
  plus Citizenship

Head & Hand

Growth Mindset

- Student-Centered
- Interdisciplinary
- Technology-Infused
- Community Connected
- Problem- and Project-Based
- Process and Product Oriented
The 6 Rs and Bloom’s

The Old 3 R’s
- Reading
- wRiting
- aRithmetic

The New 3 R’s
- Rigor
- Relevance
- Relationship

Bloom’s Taxonomy (Revised)

Based on an APA adaptation of Anderson, L.W. & Krathwohl, D.R. (Eds.) (2001)
Ipswich Successful HOMs

- Thinking
- Persistence
- Communication
- Self-Management
- Collaboration
- Creativity

Success
Ipswich Indicators

- Rigor
- Relevance
- Engagement
The Partnership for 21st Century Skills is a national organization that advocates for 21st century readiness for every student.
21\textsuperscript{st} Century Skills Framework

\textbf{Learning & Innovation Skills}
- Critical Thinking & Problem Solving
- Creativity & Innovation
- Communication & Collaboration

\textbf{Information, Media & Technology Skills}
- Information Literacy
- Media Literacy
- ICT (Information, Communications & Technology) Literacy

\textbf{Life & Career Skills}
- Flexibility & Adaptability
- Initiative & Self-Direction
- Social & Cross-Cultural Skills
- Productivity & Accountability
- Leadership & Responsibility
Figure 3: Index of Changing Work Tasks in the U.S. Economy 1960-2009

Focus on Doing not Knowing

The world no longer cares about how much you know, the world cares about what you can do with what you know – *Tony Wagner*

- Critical Thinking and Problem Solving
- Communication, oral and written
- Collaboration and Leadership
- Creativity, Curiosity and Imagination
- Accessing and Analyzing Information
- Initiative and Entrepreneurialism
- Agility and Adaptability
Focus on Learning NOT Teaching

- High-performance work environments
- Varied and collaborative
- Lifelong learning
Blended Learning

- Seamless Technology Integration
- Online and Virtual Delivery
- Production of Technology
Whole Brain Thinking

- Asia, Automation and Affluence
- Differentiated instruction
- Whole child approach

1. Design
2. Story
3. Symphony
4. Empathy
5. Play
6. Meaning

6 Senses for the Conceptual Age

Daniel Pink – A Whole New Mind

Perkins Eastman \ DPC
Differentiated Instruction

- Student Choice/Personalization
- Self-Paced and Small Group
- Anywhere, anytime learning
Anytime, Anywhere Learning

- Flip Classrooms
- Virtual Delivery
- MOOCs
Inquiry-Based Instruction

- Problem and Project-Based
- Authentic Contexts
- Performance assessment
- Product creation
Common Core and the 4 Cs
## Inquiry-Based Continuum

**STUDENT PROJECTS**

- Classroom
- School-Wide
- After School
- Intersession
- Senior
- Capstone
- ELOs
- Internships
- Community Service

<table>
<thead>
<tr>
<th>Comprehensive Schools</th>
<th>Project-Based Learning</th>
<th>Expeditionary Learning</th>
<th>CTE Programs</th>
<th>STEM and STEAM</th>
<th>Progressive &amp; Constructivist Programs</th>
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<tr>
<td>IB Schools</td>
<td>No Excuses Schools</td>
<td>Charter Schools</td>
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</table>
Teaming and Collaboration

- Meaningful Integration of Disciplines
- Cohort Groupings / Reduced Student Load
- Teacher and Student Collaboration
STEM and STEAM

- STEM as meta-discipline
- Art and Humanities as Glue
- Design Thinking Process
STEM and STEAM

Ask Questions
- What am I observing?
- What does this evidence mean?
- What is the relationship between these variables?
- How can I make my model more accurate?
- What evidence do I need to answer my question?
- What hypothesis can I state based on my observations?
- Is the data used correctly in the argument?

Investigate
- Use the Scientific Method.
- State the goal of the investigation.
- Predict outcomes.
- Plan a course of action that will provide the best evidence to support conclusions.
- Use scientific ideas to show why data can be considered evidence.
- Reduce error in procedures.

Use Math
- Use computers to analyze very large data sets for patterns and trends.
- Use mathematical representations to support scientific conclusions.
- Create algorithms (a series of ordered steps) to solve a problem.
- Use digital laboratory tools to observe, measure, record, and process data.
- Make quantitative predictions.

Communicate
- Be a critical consumer of information about science.
- Critically read scientific texts to determine the central ideas and obtain scientific information to describe patterns in evidence.
- Use multiple sources to obtain information used to evaluate the validity of claims and methods.
- Communicate ideas by using tables, diagrams, graphs, models, interactive displays, and equations as well as orally, in writing, and discussion.

Design a Model
- Models include diagrams, physical replicas, mathematical representations, analogies, and computer simulations.
- Models highlight some ideas and simplify others.
- Models are used to help find questions and explanations, to get data to predict, and to communicate ideas.
- Models are based upon evidence. New evidence, changes the model.

Analyze Data
- Construct and interpret graphical displays of data.
- Use computers to tabulate, graphically represent data, visualize, and statistically analyze.
- Use math to represent relationships between variables and identify patterns.
- Take into account sources of error.
- Is one variable the cause (causal), or do both just happen at the same time (correlational)?

Explain
- An explanation includes qualitative or quantitative relationships between variables that predict and describe phenomena.
- Design investigations that generate data to determine explanations to questions.
- Apply scientific reasoning to show why the data or evidence is adequate for the explanation or claim.
- Construct an explanation using models or representations.

Argue
- Argue when investigating a phenomenon, resolving questions about measurements, building data models, and using evidence to evaluate claims.
- Arguing happens when listening, comparing, and evaluating competing ideas and methods.
- Respectfully provide and receive critiques about one’s explanations, procedures, models, and questions by citing relevant evidence and posing and responding to questions.

Communicate
- Be a critical consumer of information about science.
- Critically read scientific texts to determine the central ideas and obtain scientific information to describe patterns in evidence.
- Use multiple sources to obtain information used to evaluate the validity of claims and methods.
- Communicate ideas by using tables, diagrams, graphs, models, interactive displays, and equations as well as orally, in writing, and discussion.

Science Practices
- STEM and STEAM
- Ask Questions
- Investigate
- Use Math
- Communicate
- Design a Model
- Analyze Data
- Explain
- Argue

Next Generation Science Standards
- Ask Questions
- Investigate
- Use Math
- Communicate
- Design a Model
- Analyze Data
- Explain
- Argue

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Ipswich STEAM Integration

### Strengths

- Many teachers recognize that it is necessary to explore new, more engaging, and more rigorous instructional practices to help students become successful on the test and in learning beyond the test.
- Some staff recognizes that the present strategies often were not meeting the ways that students learned.
- There are examples of excellent teaching practices throughout IPS that could be shared and brought to scale.
- Teachers utilize their local habitats for accessible and meaningful hands-on learning opportunities.
- There is a healthy collaborative work environment in the schools.
- IPS teachers are motivated to learn and grow and have a history of strong curriculum development.
- There is a desire for increased professional collaboration.
- Teachers have good relationships with students.

### Needs

- Incorporate STEAM learning strategies and projects that are more rigorous, relevant, and aligned to the NGSS.
- Increase the rigor associated with high-level questioning techniques and academic discussions around STEAM.
- Increase relevance in student learning through authentic resources from STEAM careers and learning connections between tasks and real-world scenarios.
- Increase professional learning to support the inclusion of engineering design practices, formative assessment processes, content integration, and project-based learning methods.
- Leverage team-planning time to discuss and share innovative STEAM teaching strategies, projects, and authentic assessments.
Design/Engineering Thinking

- Dewey / Head and Hand Integration
- Academic / CTE Integration
- Maker Movement
Design Thinking

![Diagram of design thinking process with circles labeled Empathy, Define, Ideate, Prototype, Feedback.]

![Image of NeoNurture, a parts incubator, and Embrace, a sleeping bag design for premature or low birthweight babies.]

Embrace incorporates a phase change material in a sleeping bag design to regulate a premature or low birthweight baby's temperature. It can be used at home, in clinics, or as a transportation device. We are launching in India in 2018.

how it works

1. Heat water and pour into heating unit. Place unit underneath phase change material pouch.
2. Place heated pouch into the sleeping bag and lay the baby inside.
3. The device works for over four hours at a time. An integral sensor reads the temperature on the bag to ensure it should be removed.

NeoNurture: car-parts incubator

newvistadesign
Envisioning 21st Century Schools © 2016

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Career Tech Education

- Vocational/Academic Integration
- Broad based transferable skills building
- Career Pathways
Internships and Field Studies

- Adult world connections and mentoring
- Authentic projects and contexts for learning
- Writing and reflection
Deeper Learning

• Mastery of Core Academic Content
• Critical Thinking and Problem Solving
• Collaboration
• Effective Communication
• Self-Directed Learning
• An “Academic/Growth Mindset”
Academic/Growth Mindset

Hierarchy of Learner Needs

Learning Mindsets:
- I belong in this learning community.
- I can change my abilities through effort.
- I can succeed.
- This work has value and purpose for me.

Student Agency

Learning Readiness

... Grit, perseverance and a passion for long term goals...
Community Partnerships

- Permeable School Walls
- Adult-World Connections / Internships
- Leveraged Resources
Global Learning

- International Collaborations
- Sister Classrooms
- Travel Studies
Learning from Best Practices

- Forward-thinking programs and facilities
- Key spaces and important adjacencies
- Lessons learned
Project-Based Learning

... the ONLY way to teach 21st century and independent learning skills
The 6 A’s of Powerful Projects

- Academic Rigor
- Authenticity
- Applied Learning
- Active Exploration
- Adult Connections
- Assessment Practices
Media Saves the Beach
21st Century Skills Activity
What 21st Century Skills Are Most Important to Your School and District?

Bloom’s Taxonomy
- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation

Partnership for 21st Century Skills
- Critical Thinking
- Communication
- Collaboration
- Creativity

NCREL - North Central Regional Education Laboratory
- Digital Age Literacy
  - Basic, scientific, economic and technological literacy
  - Visual literacy and information literacy
  - Multicultural literacy and global awareness

Exploring Learning Goals for the 21st Century

Permissions
- Collaboration
- Critical Thinking
- Creative Thinking
- Digital Literacy
- Knowledge
- Research

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Which 21st Century Skills and Habits of Mind do you see as most important?