33 Years Focused on K-12

125 Projects

50 Elementary Schools

75% Renovation/Additions (Most Phased/Occupied)
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February '16 through '17 (Full Year)
### MSBA/IPSWICH PROCESS

#### FEASIBILITY & SCHEMATIC DESIGN

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**Many Key Decisions March-May**

- Submit PDP: June 2
- May 2013
- May 2014
- Oct 2014
- Nov 2014
- Dec 2014
- Jan 2015
- Feb 2015
- March 2015
- April 2015
- May 2015
- June 2015
- July 2015
- August 2015
- September 2015
- October 2015
- November 2015
- December 2015
- January 2016
- February 2016

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**newvista design**

*Envisioning 21st Century Schools © 2015*
### MSBA/IPSWICH PROCESS

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### PROGRAMMING

- Program Analysis
- Program Updates
- ELT Kick Off
- ELT Meetings
- Workshop #1
- Workshop #2
- Faculty Meeting
- Develop Program Requirements
- Develop Alternatives
- Space Summary Reconciliation
- Community
- Evaluate Alternatives
- Develop PDP

### January - February
- Info Gathering (Existing Condition & 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)
SITE ASSESSMENTS
EVALUATIONS & TEST FITS

Feasibility - Comparison Matrix

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Community Values

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<th>1. Location</th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Traffic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Recreational Field Space</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Re-use of Facilities/Playgrounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Abuttor Impact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Educational Criteria

| 1. Proximity To Students |     |     |     |     |     |
| 2. Outdoor Learning Environments |     |     |     |     |     |
| 3. Municipal Learning Opportunities |     |     |     |     |     |
| 4. Optimal Possibilities, # of Acres, other |     |     |     |     |     |
| 5. E. 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 |     |     |     |     |     |

EXAMPLE SITES
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
VISIONING PROCESS FOR THE WINTHROP SCHOOL

VISIONING PROCESS

GOALS & OBJECTIVES FOR DESIGN

IPSWICH’S CORE EDUCATIONAL LEADERSHIP TEAM
DESIGN WORKING GROUP
IPSWICH COMMUNITY GROUPS

STEAM LEARNING GOALS AND BEST PRACTICES

DESIGN PATTERNS AND GUIDING PRINCIPLES

KEY SPACES, ADJACENCIES AND CONCEPTUAL DESIGN DIRECTIONS
## Programming & Design

### TRANSLATION OF NEEDS & OBJECTIVES

### Core Classrooms

<table>
<thead>
<tr>
<th>Classroom Type</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten</td>
<td>4 per Grade</td>
</tr>
<tr>
<td>1st-2nd Grade</td>
<td>4 per Grade</td>
</tr>
<tr>
<td>3rd-5th Grade</td>
<td>4 per Grade</td>
</tr>
</tbody>
</table>

**Total Core Classrooms: 23,300 sf**

### Special Education

<table>
<thead>
<tr>
<th>Classroom Type</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Size Room</td>
<td>1 (SPED)</td>
</tr>
<tr>
<td>Half Size Room</td>
<td>1 (OT/PT)</td>
</tr>
<tr>
<td>Learning Center</td>
<td>1 (at K-2)</td>
</tr>
<tr>
<td>Office/Conference</td>
<td>2 (ADMIN)</td>
</tr>
<tr>
<td>Quiet Rooms</td>
<td>1 (at K-2)</td>
</tr>
<tr>
<td>Breakout</td>
<td>1 per Grade</td>
</tr>
</tbody>
</table>

**Total Special Education: 5,825 sf**

### Art/Storage

<table>
<thead>
<tr>
<th>Area</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office/Storage</td>
<td>300 sf</td>
</tr>
</tbody>
</table>

**Total Art/Storage: 1,150 sf**

### Music/Ensemble

<table>
<thead>
<tr>
<th>Area</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen/Storage</td>
<td>2,153 sf</td>
</tr>
</tbody>
</table>

**Total Music/Ensemble: 1,575 sf**

### Media Center

<table>
<thead>
<tr>
<th>Area</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Lunch</td>
<td>500 sf</td>
</tr>
</tbody>
</table>

**Total Media Center: 2,875 sf**

### Gymnasium

<table>
<thead>
<tr>
<th>Area</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office/Storage</td>
<td>300 sf</td>
</tr>
</tbody>
</table>

**Total Gymnasium: 6,000 sf**

### Cafeteria/Stage

<table>
<thead>
<tr>
<th>Area</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen/Storage</td>
<td>2,153 sf</td>
</tr>
</tbody>
</table>

**Total Cafeteria/Stage: 4,675 sf**

### Admin/Guidance

<table>
<thead>
<tr>
<th>Area</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse’s Suite</td>
<td>510 sf</td>
</tr>
<tr>
<td>Custodial/Storage</td>
<td>1,865 sf</td>
</tr>
</tbody>
</table>

**Total Admin/Guidance: 2,790 sf**

**Total Core: 53,518 NSF**

**Total Core: 80,277 GSF**

---

**Zervas School, Newton**

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Educational Visioning

Winthrop and Doyon Elementary School
February 10, 2016

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
• EWG Workshop ONE – February 29, 2016
• Community Forum TWO – March 10, 2016
• EWG Workshop TWO – March 14, 2016
• Faculty Workshop – March 17, 2016
Best Practices

21st Century Learning and PBL
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
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.
21st Century Skills Framework

Learning & Innovation Skills
- Critical Thinking & Problem Solving
- Creativity & Innovation
- Communication & Collaboration

Information, Media & Technology Skills
- Information Literacy
- Media Literacy
- ICT (Information, Communications & Technology) Literacy

Life & Career Skills
- Flexibility & Adaptability
- Initiative & Self-Direction
- Social & Cross-Cultural Skills
- Productivity & Accountability
- Leadership & Responsibility
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
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

- Comprehensive Schools
- Project-Based Learning
- Expeditionary Learning
- CTE Programs
- STEM and STEAM
- Progressive & Constructivist Programs
- IB Schools
- No Excuses Schools
- Charter Schools

STUDENT PROJECTS

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

Science Practices

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.

Stacey Reed 2013

newvista design
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IPSWICH
PUBLIC SCHOOLS
Ipswich STEAM Integration

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>Incorporate STEAM learning strategies and projects that are more rigorous, relevant, and aligned to the NGSS.</td>
</tr>
<tr>
<td>Some staff recognizes that the current strategies often were not meeting the ways that students learned.</td>
<td>Increase the rigor associated with high-level questioning techniques and academic discussions around STEAM.</td>
</tr>
<tr>
<td>There are examples of excellent teaching practices throughout IPS that could be shared and brought to scale.</td>
<td>Increase relevance in student learning through authentic resources from STEAM careers and learning connections between tasks and real-world scenarios.</td>
</tr>
<tr>
<td>Teachers utilize their local habitats for accessible and meaningful hands-on learning opportunities.</td>
<td>Increase professional learning to support the inclusion of engineering design practices, formative assessment processes, content integration, and project-based learning methods.</td>
</tr>
<tr>
<td>There is a healthy collaborative work environment in the schools.</td>
<td>Leverage team-planning time to discuss and share innovative STEAM teaching strategies, projects, and authentic assessments.</td>
</tr>
<tr>
<td>IPS teachers are motivated to learn and grow and have a history of strong curriculum development.</td>
<td></td>
</tr>
<tr>
<td>There is a desire for increased professional collaboration.</td>
<td></td>
</tr>
<tr>
<td>Teachers have good relationships with students.</td>
<td></td>
</tr>
</tbody>
</table>
Design/Engineering Thinking

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

NeoNurture: car-parts incubator

Embrace: sleeping bag design to regulate a premature or low birthweight baby’s temperature.

How it works:
1. Fill water and pour heat-keeping unit into the Embrace neo. Place unit underneath the Embrace neo.
2. Place the device on the baby. The device will automatically adjust its temperature to maintain the baby’s temperature.
3. The device will operate for several hours. When the baby has reached its proper temperature, the device will stop operating. To restart, simply plug in the device and it will automatically begin heating the baby again.

I.D. Honorable Mention
2010 Annual Design Review

WHY DESIGN NOW?
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.

Physiological Needs: Food, Safety, Love

Learning Strategies & Habits

Quality Instruction, Guidance and Experiences

... 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**

- **Knowledge**
  - Critical Thinking
  - Communication
  - Collaboration
  - Creativity

- **Partnership for 21st Century Skills**
  - Critical Thinking
  - Teamwork
  - Self-direction
  - Flexibility

---

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IPSWICH PUBLIC SCHOOLS

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