**BEYOND DESIGN PROJECT ZERO:**

Abstract:

This session will require active participation from the attendees in understanding, identifying, and applying design thinking techniques. The session will highlight how design thinking has been applied to learning environments by both educators and learning environment planners. Case studies of how these techniques improved collaboration and creativity will be discussed and demonstrated.

**Learning Objectives:**

1. Describe what Design Thinking is and how it is being used in education.
2. Identify Design Thinking techniques used to increase collaboration and creativity.
3. Understand how to integrate Design Thinking into visioning for educational design projects.
4. Understand how Design Thinking techniques can aid in compressed project schedules.

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**Paul Hartsig**  
Superintendent  
Dowagiac Union Schools  
paulhartsig@dowagiacschools.org

**Greg Monberg AIA ALEP**  
Director of Architecture  
Wightman and Associates  
GMONBERG@WIGHTMAN-ASSOC.COM

**J. Scott Winchester AIA**  
Project Manager/ Tribal Liaison  
Seven Generations Architecture & Engineering, LLC  
swinchester@7genae.com
Listen, Communicate & Be Transparent within realistic funding limits. Cross-section Champions & CAVE Alignment of attitudes & cultural perception. Sound allocation of funding. Clarity of goals, need & benefits.

What leads to a successful project?

People

Procedures

Resources

Vision

Values

Economy

Factors Leading to Success

Design Thinking Introduction
Who uses DESIGN THINKING?

Building Empathy for the User
How Design Thinking Worked for Dowagiac

We...
Developed goals and a vision
Defined what 21st Century Learning means for Dowagiac
Designed spaces that followed the goals and vision
Created plans and voted on the best
Diagnose

The Team
• Small, private room to work on projects
• Need a table, projector to reflect, iPad and show your group what you are doing
• Use for homework after school with a teacher available to help
• Teachers could observe another class in a different content/grade level to learn new ideas or work on cross-curricular topics
• Teachers could meet in library to work together
• Finish homework
• Relax
• Socialize
• Come in during recess to work on homework
• During RICA with teacher permission
• Teacher could send student groups down to work on a project
• Projects with available assistance
• Socialize
• Open an hour after school 3:30 pm

This will allow for all students to have access to the library in case the school day doesn’t always allow for the student to have access during the day. The library should also be used for socializing and relaxing before and after school.
The school's previous labs were arranged as four traditional spaces. There was no ability to do lab work and teachers were restricted to books and lecture. The environments lacked the resources, flexibility, and collaborative spaces needed to successfully implement Next Generation Science Standards.

**Fixed Lab Stations**

- No life safety features, such as showers, gas shut off, or multiple means of egress.

**Corridor Walls**

- Lacked proper fire separation.

**Lockers in the Corridor**

- No interconnection between classrooms.
A slight expansion of the building envelop allowed for a comprehensive interior renovation that quadrupled the number of learning spaces. L-shaped classrooms define learning zones while maintaining adjacencies of space and teacher control.

OPERABLE PARTITIONS
SUPPORT TEAM
TEACHING

THREE POINTS OF PROJECTION ALLOW STUDENTS TO ENGAGE WITH EACH OTHER AND THE MATERIAL

ADDED SECOND MEANS OF EGRESS

Next Generation Science Labs
INTERIOR – INQUIRY-BASED LEARNING (AFTER)

The transformed labs are equal to those found in the professional Science industry. In addition to NGSS considerations, improvements address Health/Life Safety issues.

DEMONSTRATION CAMERA

NEW FUME HOOD WITH VISUAL ACCESS ON BOTH SIDES OF THE TWO LABS

ELECTRON SHELL PATTERN

VOICE ENHANCEMENT

STUDENTS ABLE TO PROJECT THEIR WORK
EXTERIOR – INDOOR/OUTDOOR

The built environment and site are scientific instruments, allowing students to collect data and test hypotheses through experimentation.

BIRD NEST & CAMERAS

WIND TURBINE & ENERGY DASHBOARD

RAIN BARREL

FIBONACCI SPIRAL WINDOW PATTERN

OCULUS & INTERIOR

MERIDIAN LINE

INTERIOR – INQUIRY-BASED LEARNING

Next Generation Science Labs

LABS ARE AS SHOWN, DIRECTED TO BE QUICKLY REMOVED TO SERVE AS SPACE FOR EXPERIMENTATION. A MERIDIAN LINE ALLOWS STUDENTS TO TRACK THE ANALEMMA OF THE SUN, WHILE A ONE-METER GRAPH PAPER FLOOR PATTERN SUPPORTS INVESTIGATION INTO MOMENTUM, ACCELERATION AND ENERGY.

SHOWER

LAB HAS LOW-TECH AND HIGH-TECH TOOLS

Next Generation Science Labs
Question:Response

What are they doing?
How are they doing it?
Why are they doing it?

Photosort
I Like
I Wonder
Apply

DESIGN THINKING TECHNIQUES
<table>
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<th>CHALLENGES</th>
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**Evaluate**

**Changes**

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**Library - Learning & Research Center**

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**Visual Thinking, Preferred Diagram - Critique**

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**Table:**

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<td>Aesthetics</td>
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DESIGN THINKING Bootcamp

DESIGN THINKING TECHNIQUES

Learning spaceship

Do you agree with the following statement?

1. I would support flexible scheduling of classrooms.
2. If teacher planning space were available outside the classroom, I would support flexible scheduling of classrooms.
The Transformation of Dowagiac High School is a Testament to the Design Thinking Process.

**TENETS OF BOND**

- Safety and Security
- Thermal Comfort
- Access to Natural Light
- Energy Efficient Artificial Lighting
- Improved Electrical Power
- Up to date Technology
- Innovation
- Lead
- Learn
LEAD

INNOVATE

CREATE

FLEXIBLE LEARNING STUDIOS

Existing 1958 Classrooms

IDEATE

New Competition

Academic Wing

Multi-Purpose Cafeteria

Learning Commons

Student Entrance/Exit

New Competition

Gym

Media Center
DOWAGIAC HIGH SCHOOL PROPOSED INTERIOR FINISH CONCEPT
DECEMBER 2016
MEDIA CENTER – NORTH WEST PERSPECTIVE
Learning Commons coming spring 2018

• It creates a sense of ownership
• It builds consensus
• It is collaborative
• It is creative
• It educates
• It is fast

DESIGN THINKING BENEFITS