Moorhead Area Public Schools

Facilities Master Plan

Final Report

February 23, 2015

For:

Moorhead independent School District 152
2410 14th Street South
Moorhead, Minnesota 56560

Prepared by:

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CUNINGHAM
GROUP

MOORHEAD
AREA PUBLIC SCHOOLS

IT IS NOT BECAUSE THINGS ARE DIFFICULT THAT WE DO NOT DARE,

IT IS BECAUSE WE DO NOT DARE THAT THEY ARE DIFFICULT.

- Lucius Annaeus Seneca

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INTRODUCTION

The following Facilities Master Plan report represents the culmination of many workshops, meetings and conversations that took place over the course of 5 months involving the Master Plan Task Force and the Central Office Team of Moorhead Area Public Schools. The result is a plan that is tailored to meet your specific needs and aspirations as a unified School District, one that is grounded in your tradition of excellence and life-long success, one that supports 21st Century teaching and learning, and one that allows Moorhead Area Public Schools to be thoughtful stewards in making decisions about its capital investments and school facilities.

The Mission statement of Moorhead Area Public Schools states: *"To develop the maximum potential of every learner to thrive in a changing world."*

To be successful, the Facilities Master Plan must be:

1. Grounded in your mission
2. Built on the foundation already established
3. Collaborative and inclusive
4. Physically and fiscally responsible

A Master Plan offers the opportunity to look at what might be with a longer lens, not constrained by short-term considerations. The goal is to move away from simply making do and move toward what we know is right.

We, Cuningham Group Architecture, Inc, are committed to understanding that the Team at Moorhead Area Public Schools has significant insights to contribute to the process. We thoroughly enjoyed facilitating discussions that brought diverse perspectives together to form strong bonds of understanding and support for the Mission of Moorhead Area Public Schools.

Excellent stewardship of school facilities is a critical element of a successful Master Plan. We congratulate the community of Moorhead Area Public Schools for taking this important step with a comprehensive and strategic approach to facility care and development.


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GROUP

ACKNOWLEDGEMENTS

The following list includes those individuals who participated in this process. We wish to thank everyone for your commitment of time and energy to ensuring a successful Facilities Master Plan effort.

Moorhead Area Public Schools

Facilities Task Force Members
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Bert Chamberlain
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Jeremiah Christenson, P.E.

EXECUTIVE SUMMARY

A LETTER FROM DR. KOVASH

The Facilities Master Planning Task Force has provided community perspective as we move forward in planning for the future of Moorhead Area Public Schools. This plan will help to guide us the next ten years. The group spent many hours learning, dreaming, creating, collaborating, communicating and critically thinking about the future for our schools and, most importantly, our students. I would like to recognize the hard work of the committee members and our school board in working together to develop this comprehensive master facilities plan. Our consultants have provided ideas and a process to develop a plan that is not only creative but also fiscally responsible.

This plan will serve as a roadmap or guide for our continuing work to create schools to meet the needs of our students now and in the future. The roadmap will provide a good foundation, but we may face curves and detours as we move forward. We may face changes in the next ten years, and we need to be flexible to adapt to changes we may face in education. Each step of the way we will include staff, student, family and community input and feedback.

As we develop the implementation of this plan, we will look to another critical component of this work – engagement with our community. We want to provide strategic, research-based, proactive means to hear from staff, residents and local leaders. We will have important decisions to make in the months ahead, and we want to spend time listening, learning, sharing and collaborating with the many stakeholders who are part of Moorhead Area Public Schools.

I invite you to connect with us this year so that you can easily keep up with district news, not just about facilities, but about all aspects of our education system. Find news, examples of excellence, events and information on our website at www.moorheadschools.org, follow us on Twitter @MoorheadSchools, like us on Facebook at www.Facebook.com/MoorheadSchools, read the SpudTacular section of the FM Extra each week, or read our Area Voices blog to learn about our students, staff, schools and district.

I look forward to our continued work together and our plans for the future.

Sincerely,

Dr. Lynne A. Kovash
Superintendent
Moorhead Area Public Schools

A LETTER FROM THE BOARD CHAIR

Planning for the future of Moorhead Area Public Schools takes time and input from all Stakeholders of our Community. Thank you to the members of the Facilities Master Planning Task Force and everyone who committed to do this important work for us.

The District's Mission Statement is "To develop the maximum potential of every learner to thrive in a changing world." It was developed more than 25 years ago during futuristic planning sessions of our School District and has been reviewed numerous times but never changed. That says something to me about the forethought of our predeccessors. It is a statement which focuses on preparing all of our learners, children and adults, for the future, with an understanding that the world is constantly changing.

The School Board and Administration continually look to our Mission for focus during times of planning and decision making. We are already fifteen years into the 21st Century and find learning environments and teaching methods are being changed like never before. We also know that the environment for learning is as important as the methods of teaching for student success. 21st Century Learning calls for flexible spaces that allow for multiple styles of learning through creativity and engagement. While it is universal to be uncomfortable with change, a progressive future calls for doing things differently than what has been done in the past.

Fourteen years have passed since the last comprehensive review of our District Facilities was completed, prompted by our declining student enrollment and stagnant community growth. Today, not only was it time to review our facilities simply as prudent management, but we also have unprecedented growth in student enrollment and a flourishing community. Just like in the past when School Board Members, Administrators, Staff and Community Members before us researched, planned and made bold decisions on behalf of our children and community ,we find ourselves at that same fork-in-the-road to our future. This Task Force Plan, along with community input, supplementary information and our Mission Statement, will be used to guide our planning and decisions. By doing our homework, I am confident that, together, we will arrive at the best decisions essential to providing the finest education possible within our means for all the learners in Moorhead. After all, our predecessors gave us a great example to follow.

Sincerely,

Cindy Fagerlie, Chair
School Board

Moorhead Area Public Schools

EXECUTIVE SUMMARY

LETTER FROM MAYOR

To paraphrase one of the Facilitators from Cuningham Group Architecture: "The good news is that Moorhead is growing...the bad news is that Moorhead is growing." In the last decade, Moorhead grew 18%, and this decade seems ready to surpass that. Our Community Members are young (median age 28) so it's no surprise that our schools are popping at the seams. It is also an exciting opportunity for Moorhead. I see this as an opportunity to rethink how best to deliver education to our children.

I had an opportunity to sit in on some of the community input for the development of our School District's Facilities Master Plan. I am pleased with how many people were engaged in helping shape our kids' education. Community members offered thoughtful feedback to the Architects as they worked to envision an educational community that both worked well and was fiscally sound.

It is important to me that current and future generations of students have access to the educational excellence my daughter and son had. My kids are now in college, and the Moorhead Area Public Schools did an excellent job of preparing them for the future. I also know that the investment in Moorhead's amazing educational system is a key economic development factor. The City of Moorhead recently polled new homebuyers, and the quality of our education was a key reason people chose to move or remain in our city.

As this plan is fine-tuned and grows to fruition, I am looking forward to this opportunity to enhance our educational and community excellence.

Del Rae Williams
Mayor
City of Moorhead

BACKGROUND - VALUE OF A MASTER PLAN

Moorhead is well known for its excellent academic programs, student achievements, and extensive extra-curricular programs. The Facilities Master Planning effort demonstrates the intent of the Task Force along with the Central Office Team to maintain and build upon this excellence with regard to its Facilities.

Facilities play a key role in the learning process. They can either hinder or support it. Our understanding of how all of us learn has changed dramatically in recent years. Today, learning is much more hands-on, collaborative and project based. Similarly, the methods of instructional delivery are as diverse as the range of learning activities. Consequently, the spaces to support these learning activities have also changed to include a range of different scaled spaces. This Master Plan represents the wisdom of Moorhead Area Public Schools to look to the future and provide the necessary flexibility that will allow your facilities to grow and change as your Learning Community continues to evolve.

At the most basic level, this Master Plan serves as the road map for the future, grounded in your Mission and Vision:

PRIDE IN OUR PURPOSE

"To develop the maximum potential of every learner to thrive in a changing world."

MOORHEAD VISION

"Moorhead Area Public Schools will be a progressive school district recognized for excellence at all levels. We will work collaboratively with our community to provide a premier education for every learner to achieve success while providing a safe and nurturing environment that celebrates diversity and practices mutual respect."

STRATEGIC PLANNING KEY ELEMENTS

GROWTH IN STUDENT POPULATION

The overall recommendations call for investing more than $78 million in new construction and remodeling, specifically and thoughtfully designed to meet the expected enrollment growth over the next 10 years. A second phase addresses future high school space needs. The District expects to be 434 students over capacity in the high school by the 2022-23 academic year.

This Master Plan represents the guide, developed by the Task Force, that will walk through and shape this investment in the future of students, 21st Century Learning, and the entire Community of Moorhead Area Public Schools.

The population of Moorhead was 32,177 in 2000; and had grown to 38,065 in 2010. The Metropolitan Council of Governments' projection puts the city's population at 42,250 by 2015. This growth leads to rising student numbers.

EXECUTIVE SUMMARY

While these rising student numbers can be truly exciting, they also call for discussion to begin the decision making process for the future of Moorhead Area Public Schools.

At the Elementary School level (K-5) the current enrollment is 2,851, expected to grow to 3,357 by the 2020-21 academic year.

The District Middle School level (6-8) shows an enrolled population of 1,315, expected to increase to 1,870 for the 2022-23 academic year.

Moorhead High School and the Red River Area Learning Center (RRALC) have a combined population of 1,725, with growth anticipated to reach 2,542 by the 2024-25 academic year.

> Vision is the art of seeing the invisible.
>
> — *Jonathan Swift*

The Process-In Summary

CHARRETTE WORKSHOPS

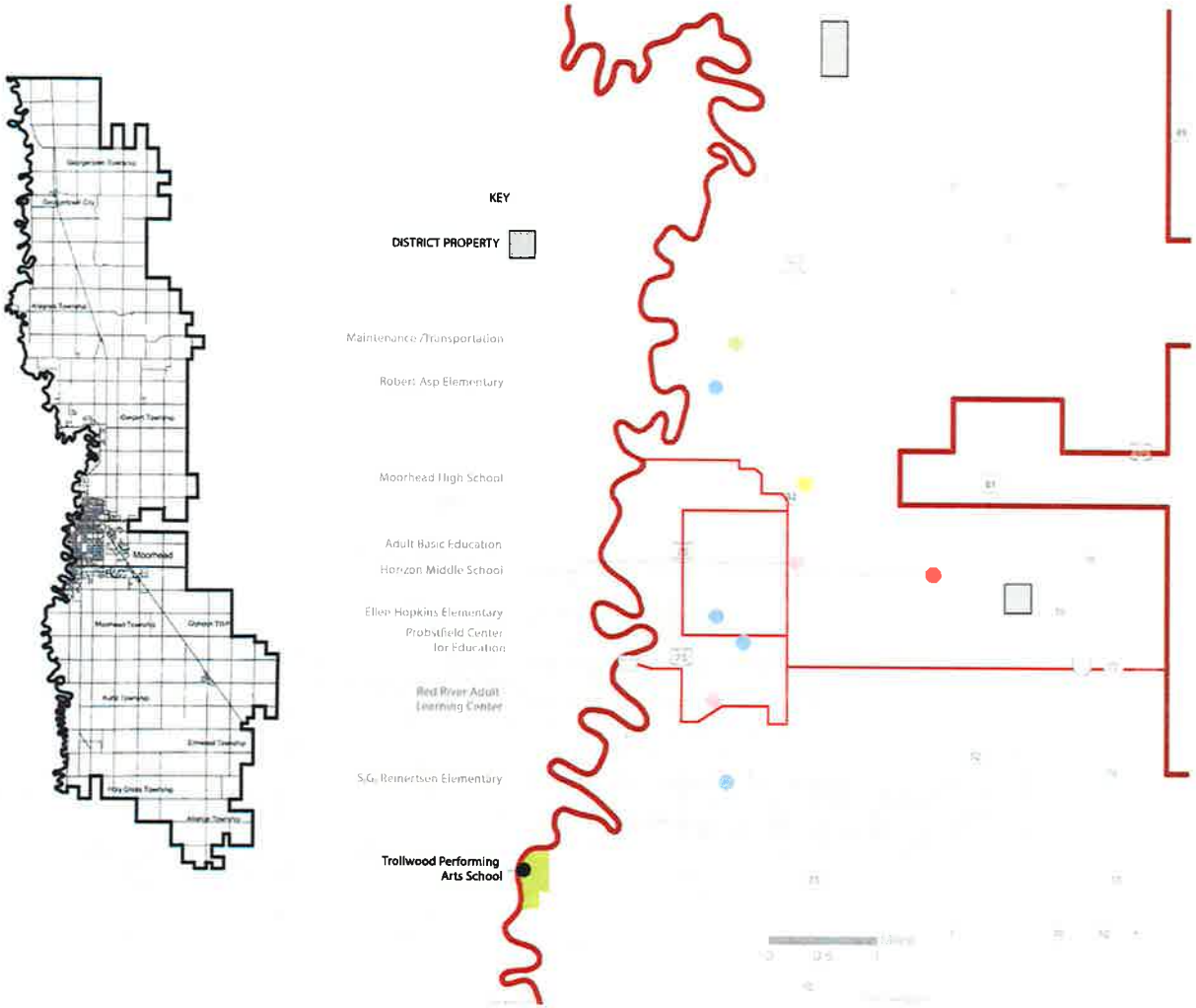
The Facilities Master Plan Task Force, assembled by the District, was charged with shaping the District's baseline standards, criteria and priorities for Moorhead Area Public Schools' facilities through a series of workshops facilitated by Cuningham Group Architecture, Inc.

Workshop 1 focused on the co-creation of the Shared Facility Vision and the establishment of a series of Facility Principles guided by that Vision.

Workshop 2 reviewed the Vision and Principles with the goal of shaping those Principles along with 21st Century Learning Best Practices to develop a customized set of Facility Standards. These elements would be used to assess the current facilities and put together a Gap Analysis*. This, in turn, would shape and guide the District's priorites for the future.

*(*A Gap Analysis is an objective way of rating the current Facilities based upon how they meet or do not meet the Principles and Standards that have been developed by the Task Force.)*

Workshop 3 took the time to review what had been establised to date. The Gap Analysis was then used, along with the other tools, (Vision, Principles and Standards), crafted by the Task Force to work in groups and study both District-Wide and site specific concepts for Moorhead Area Public Schools.



EXECUTIVE SUMMARY

Workshop 4 was a presentation to the School Board including a synthesis of these School District scenarios and identification of Common Ground. Common Ground items were synthesized, leading to the recommendations to the School Board.

Workshop 5 took the School Board through the entire process to date, further synthesized the Task Force findings and presented the specific recommendations along with their associated costs and phasing implementation.

Workshop 6 was meant to provide the School Board the time to work through all information presented by the Task Force, keeping in mind the intent of the Master Plan:

- A road map for the future
- Focused on your Vision for Learning
- Allows logical implementation of improvements over time
- Physically & Fiscally responsible

SHARED FACILITY VISION STATEMENT

A pivotal first step in the process involved the articulation of a Vision for the Facilities Master Planning effort. Taking the time up front to craft a Shared Vision served to guide the entire Master Plan process, helped set priorities, aligned resources against the priorities and provided for an efficient and effective method of reaching decisions. The Master Plan Shared Facility Vision, reads as follows:

"We envision safe, inviting, and inclusive learning environments that support a sustainable culture of excellence in 21st Century Learning, while fostering meaningful and collaborative community partnerships."

NEEDS ANALYSIS

In addition to Moorhead Area Public School's Mission Statement, Vision, and Shared Master Plan Vision, several Workshops and assessment reports contributed to this Master Plan. These analyses were both quantitative and qualitative and were completed throughout the Master Plan process.

Each evaluation and assessment provided another layer of information on which the Master Plan Principles and Standards and ultimately, the recommendations, were generated.

(More detailed information about each of these analyses can be found in both the body of this report and the report Appendix.)

What You Need

FACILITIES PRINCIPLES

A critical step in the Master Plan process involved creating a set of Facility Principles. More specifically, Facility Principles are overarching commitments to what's important for Moorhead Area Public Schools. They provide background for facility decisions and improvements. The Principles as identified by the Facilities Master Plan Task Force centered around the following categories and read as follows:

(See the body of this document for the full definition of each Facility Principle for Moorhead Area Public Schools.)

ATTRACTIVE AND INVITING

MAPS is committed to being a community development partner.

COMMUNITY

MAPS is committed to fostering community and engagement within schools inclusive of all stakeholders within the district.

FUTURE FOCUSED / ADAPTABLE AND FLEXIBLE

Moorhead Area Public Schools is committed to providing adaptable and flexible facilities for our changing community and educational needs.

STUDENT CENTERED

Moorhead Area Public Schools is committed to serving and inspiring innovative growth and learning to the Moorhead students, staff and community.

QUALTY AND EXCELLENCE IN EDUCATION

MAPS is committed to fostering quality and excellence in education.

TECHNOLOGY

MAPS is committed to supporting evolving learning approaches through technology.

SAFETY

MAPS is committed to providing safe and secure learning environments for all community stakeholders.

FACILITIES STANDARDS AND GAP ANALYSIS

Once the Facility Principles were developed, the next step involved generating a set of Facility Standards. These standards are a set of criteria that describe the physical characteristics required of all facilities to support the Facility Principles and Master Plan Vision; they are used to provide a consistent level of quality across District facilities. Once developed, the Facility Standards were utilized to systematically evaluate whether the existing District facilities meet the criteria. They also act as standards for future improvements.

DEFINITIONS OF ZONES

The standards apply to all existing facilities and to future construction projects. As the term "standard" implies, they are meant to establish guidance for value and quality for Moorhead Area Public Schools facilities, though they will not be legally binding. They will be useful for staff and consultants hired by the District to assure consistency, value and quality across all facilities as they are maintained, improved or built.

They are grouped by "zones" of work:

Building

Organization and design of the individual buildings; their internal circulation and spaces

Interiors and Finishes

Finer scale issues relating to the materials and fixtures of spaces within the building

Systems

Various infrastructure systems which operate within the building - mechanical, electrical, communication, technology

Site

The grounds area outside the building, including drives, parking, fields and landscaping

Community/Off-Site

Community based learning environments, or other environments not physically located at a Moorhead District Facility

(Please refer to the body of this report to find a list of the Standards in their entirety)

Gap Analysis

The Facility Standards, once crafted, were used to assess all District facilities. Teams representing each of the schools identified the extent to which their campus met each standard. The result of this evaluation is referred to as the Gap Analysis.

Going forward, the process for applying these standards to each site will start with administrative directive. It includes:

- Understanding the facility principles and District-Wide facility standards.
- Reviewing individual school summaries to understand the character of each site and its key issues.
- Reviewing District priorities to ascertain priority work across all sites and recommendations.

EXECUTIVE SUMMARY

What You Have

FACILITIES ASSESSMENT REPORT

Another key component that provides base information for Master Plan recommendations is the Facility Condition Assessment. The Assessment, completed by Cuningham Group and its engineering consultants, evaluated all of the District's facilities including interiors, exteriors, finishes, and mechanical, electrical and structural systems.

For the Master Planning purposes, the Assessment determined that the district facilities score above average in an overall review; with 2 of the 9 facilities having been constructed in the last 15 years. The remainder of the existing facilities were originally constructed in 1966 (Moorhead High School) and in the years following; as such the older buildings tend to exhibit the need for updates of primary systems such as mechanical and building envelope systems while the more recent buildings have fewer issues. The service life of the Transportation building is short unless substantial site, building envelope, mechanical and electrical improvements are made. The existing elementary facilities along with the existing high school lack some educational adequacy features needed to meet 21st Century learning. Creating these functional spaces could lead to extensive remodeling. In summary the district's facilities require some combination of facility maintenance, replacement and upgrades to maintain and/or improve the current quality of the district's facilities.

Additionally, the high-priority recommendations were incorported into the Master Planning recommendations and cost estimates, especially where needs to refurbish a facility for learning goals overlap with the facility condition requirements.

(The full Facilities Assessment Report can be found in the Appendix Section of this document.)

PARAMETERS

All of the previous information was synthesized into a set of Parameters, used to guide the subsequent conceptual design efforts. They are as follows:

- VALUE PAST COMMUNITY EFFORTS
- MINIMIZE TRANSITIONS
- ELIMINATE LEASED SPACE
- PREFER SINGLE HIGH SCHOOL
- AVOID LOCATING SCHOOL NEAR INDUSTRIAL AREA
- PREFER LOCATING KINDERGARTENS AT ELEMENTARY SCHOOLS
- STRIVE FOR EQUITY ACROSS ELEMENTARY SCHOOLS
- LIMIT TRANSPORTATION TIME TO ELEMENTARY SCHOOLS: SIZE, PROGRAM AND AMENITIES ARE KEY FACTORS
- CENTRALLY LOCATE MIDDLE SCHOOL AND HIGH SCHOOL
- PLAN FOR 600 STUDENTS PER GRADE
- TARGET ELEMENTARY BUILDING ENROLLMENT TO UNDER 750
- CONSIDER LOCATING ABE, RRALC AND COMMUNITY EDUCATION ON ONE SITE
- ADDRESS GROWTH IN EARLY LEARNING AND EARLY INTERVENTION.

TASK FORCE RECOMMENDATIONS

The following reccomendations are a direct result of the Moorhead Area Public Schools 10 year Facilities Master Plan Visioning Workshops. As a result of many of the exercises, discussions, analysis and estimates the facility recomendations have been divided into two major categories: actions that are directly reccomended by this plan (identified in **bold**) and actions that the district has already planned for; requires additional review; has performed and/or intends to fund separately. Please see below:

- **Probstfield Center for Education (Renovation)**
  - Probstfield to house all Kindergarten for the district (Action already performed January 2015)
  - Probstfield receives kitchen remodeling (District has plan already in place to perform action Summer of 2015)
  - **Probstfield receives new play ground to accommodate facility population increase from Kindergarten.**
  - **Probstfield becomes Early Learning Center for District (2025 plan, with varying factors impacting conditions for change). Kindergarten returns to Elementary Schools.**
- **750 student elementary school (New Construction)**
  - **A new elementary educational facility is proposed to address the need of the district to alleviate the pressure caused by a larger elementary population than the current district facilities were designed to support along with the expected growth of the Moorhead community.**
  - Location of the new facility is under review; some options are: either east of Horizon Middle School on 40 acres of district-owned land. A second site on the south end is yet to be determined.
  - A second new elementary educational facility may be needed for the District (2025 plan, with varying factors impacting conditions for change).
- **Existing Elementary School Upgrades (Renovation)**
  - **All entries for existing elementary facilities will be reviewed, redesigned and renovated for security and safety upgrades.**
  - **All existing elementary facilities will have their current learning spaces reviewed, redesigned and renovated to**

facilitate 21st Century Learning.*

- **Horizon Middle School (Addition)**
  - **Horizon Middle School to receive a 750 student performance space addition.**
  - **Horizon Middle School to receive 1,200 student addition to house Grades 5 and 6, creating a 5-8 Grade Level Middle School Campus. The 5th Grade moves from Elementary Schools.**
- **Moorhead High School (2025 Plan)**
  - **The Parking lot and entries at Moorhead High School facilities will be reviewed, redesigned and renovated for security and safety upgrades; this is an immediate need.**

The recommendations for Moorhead High School consist of two options that differ greatly in price, but will allow the district time to determine which solutions best serve the Moorhead community. They are:

  - **Construct a new 2,250 student High School facility on a new site (to be selected and purchased in the future) and renovation of the original High School Facility into a new facility that serves the Moorhead Community's needs.**
  - **New addition to the existing high school facility to replace the 1966 section, with new design thus allowing the high school to continue taking advantage of the amenities that currently exist at the Moorhead High School Site.**
- Accessory Facilities:
  - Red River Area Learning Center program to undergo rebranding and image overhaul. The exact path is yet to be determined and is not included in this study. It is understood that these programs and any anticipated growth in these programs will need to be accommodated in the future.

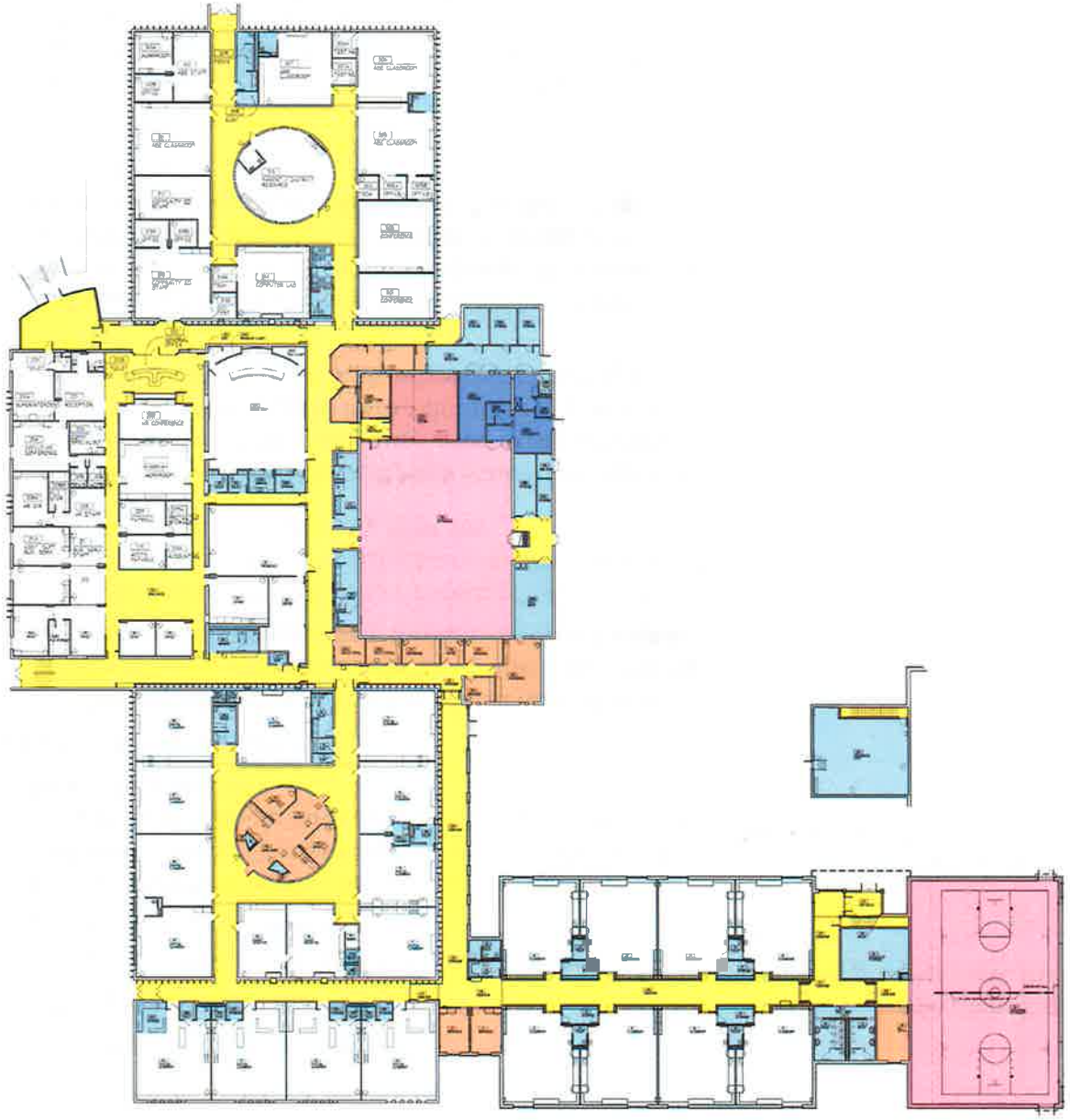
***District to begin planning and subsequently integrating 21st Century Learning practices into the curriculum in preparation for new learning spaces.**

The following pages show the conceptual recommendations at each site juxtaposed with the existing plans.

EXECUTIVE SUMMARY

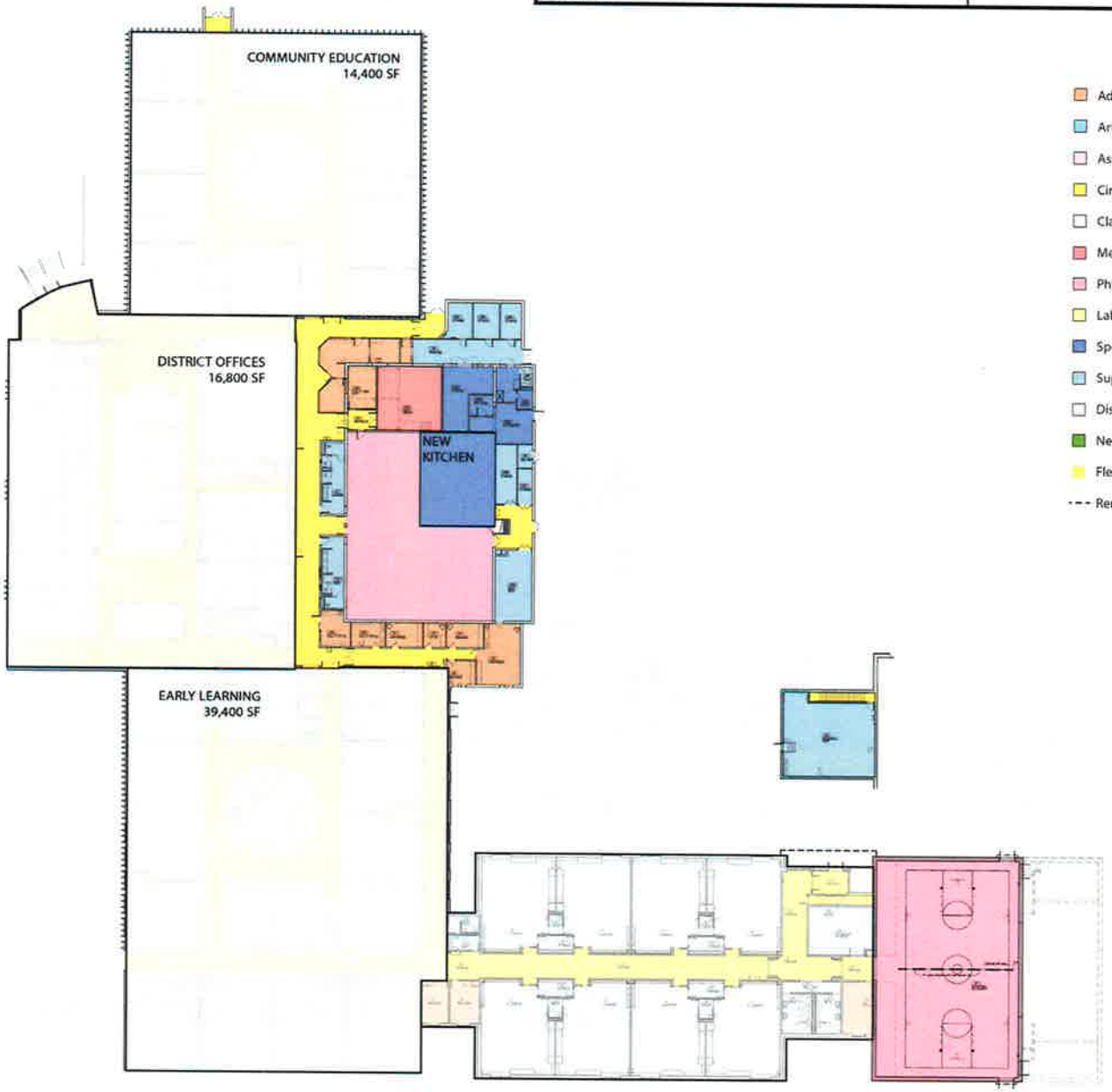
Conceptual Floor Plans

PROBSTFIELD CENTER FOR EDUCATION - EXISTING UTILITY PLAN



PROBSTFIELD CENTER FOR EDUCATION

Sections Per Grade:	N/A



EXECUTIVE SUMMARY

Conceptual Floor Plans

ELLEN HOPKINS ELEMENTARY - EXISTING UTILITY PLAN

ELLEN HOPKINS ELEMENTARY

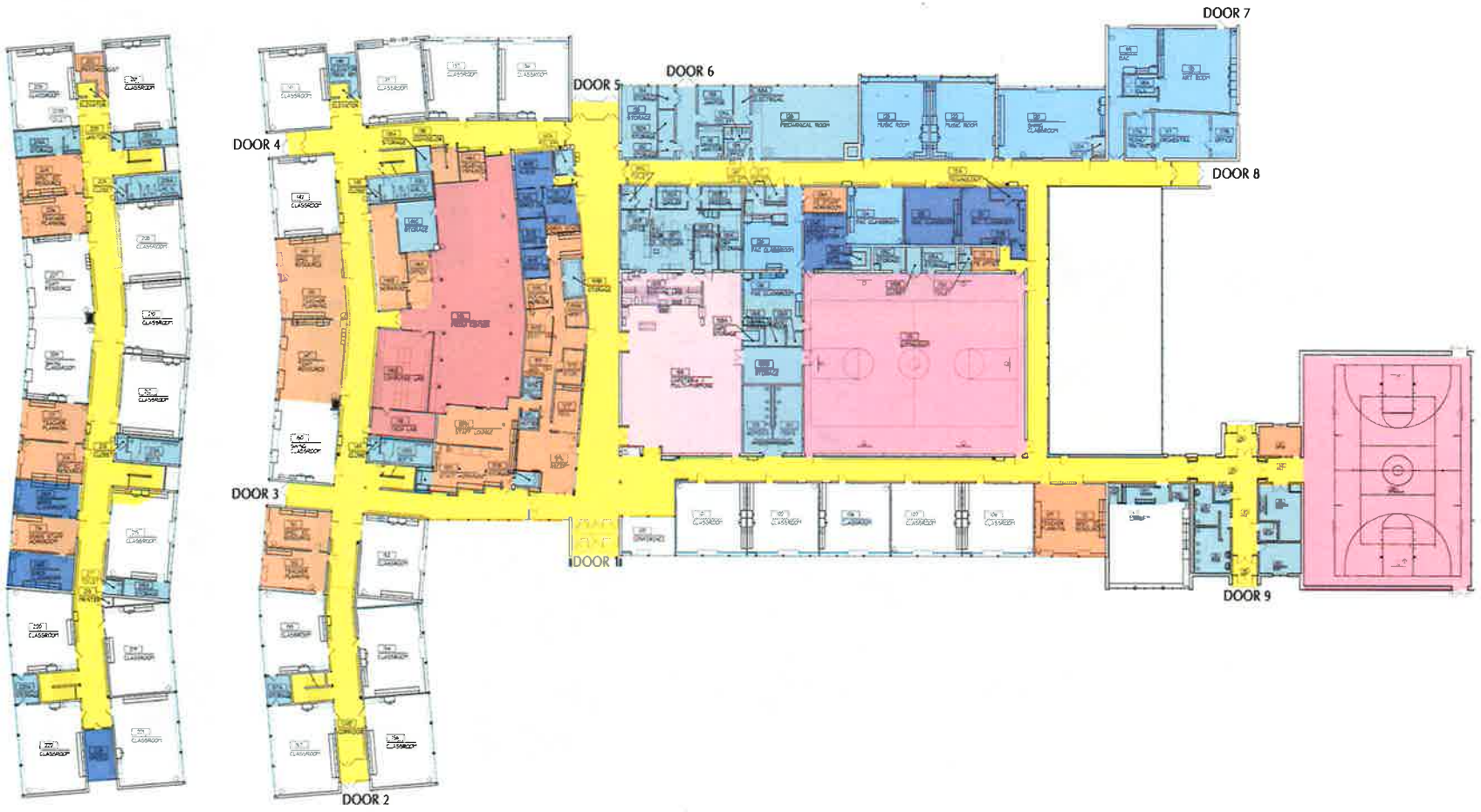
Ellen Hopkins

Design Capacity:	**750**
Sections Per Grade:	**6**

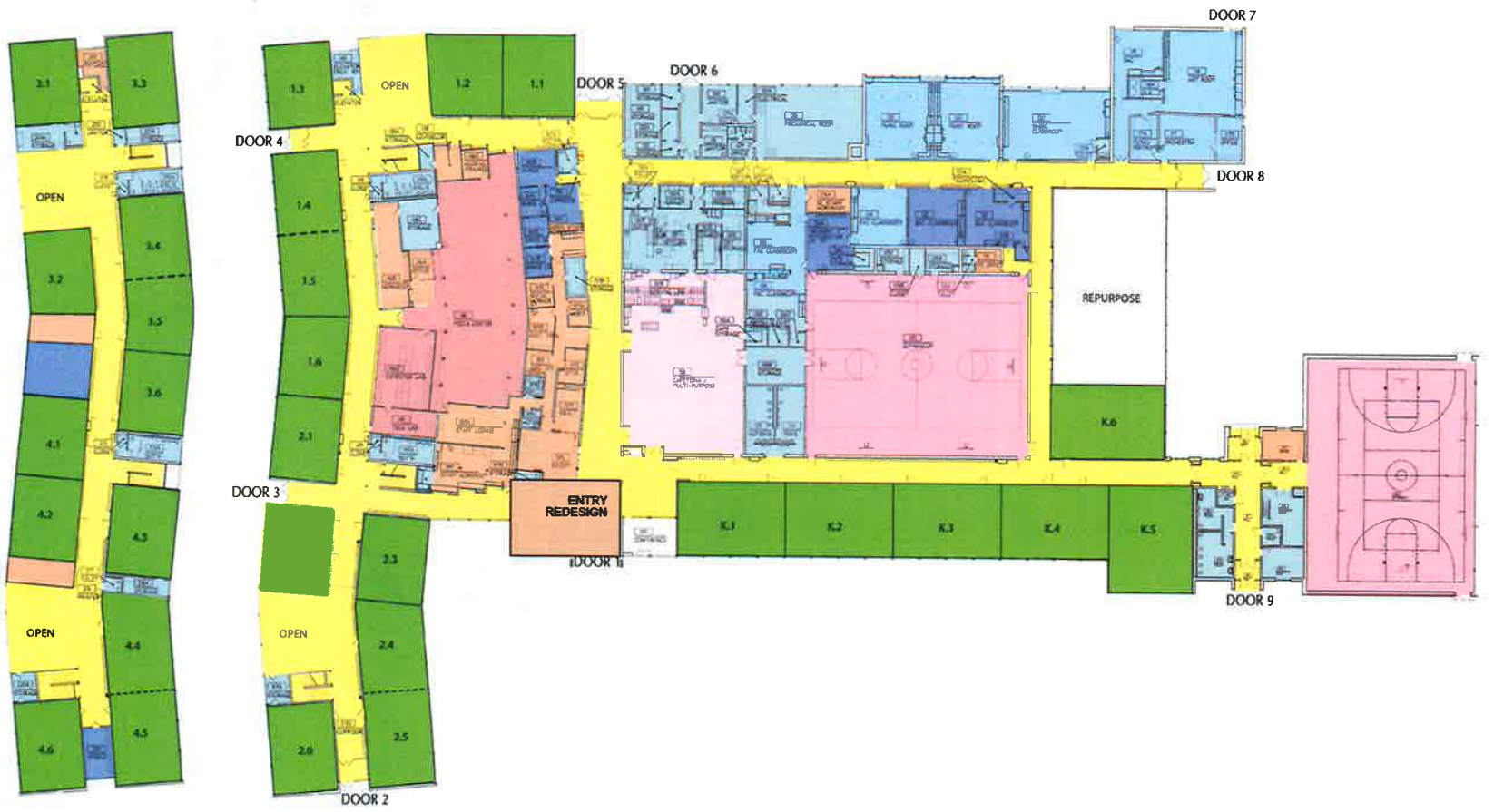
EXECUTIVE SUMMARY

Conceptual Floor Plans

ROBERT ASP ELEMENTARY - EXISTING UTILITY PLAN



ROBERT ASP ELEMENTARY



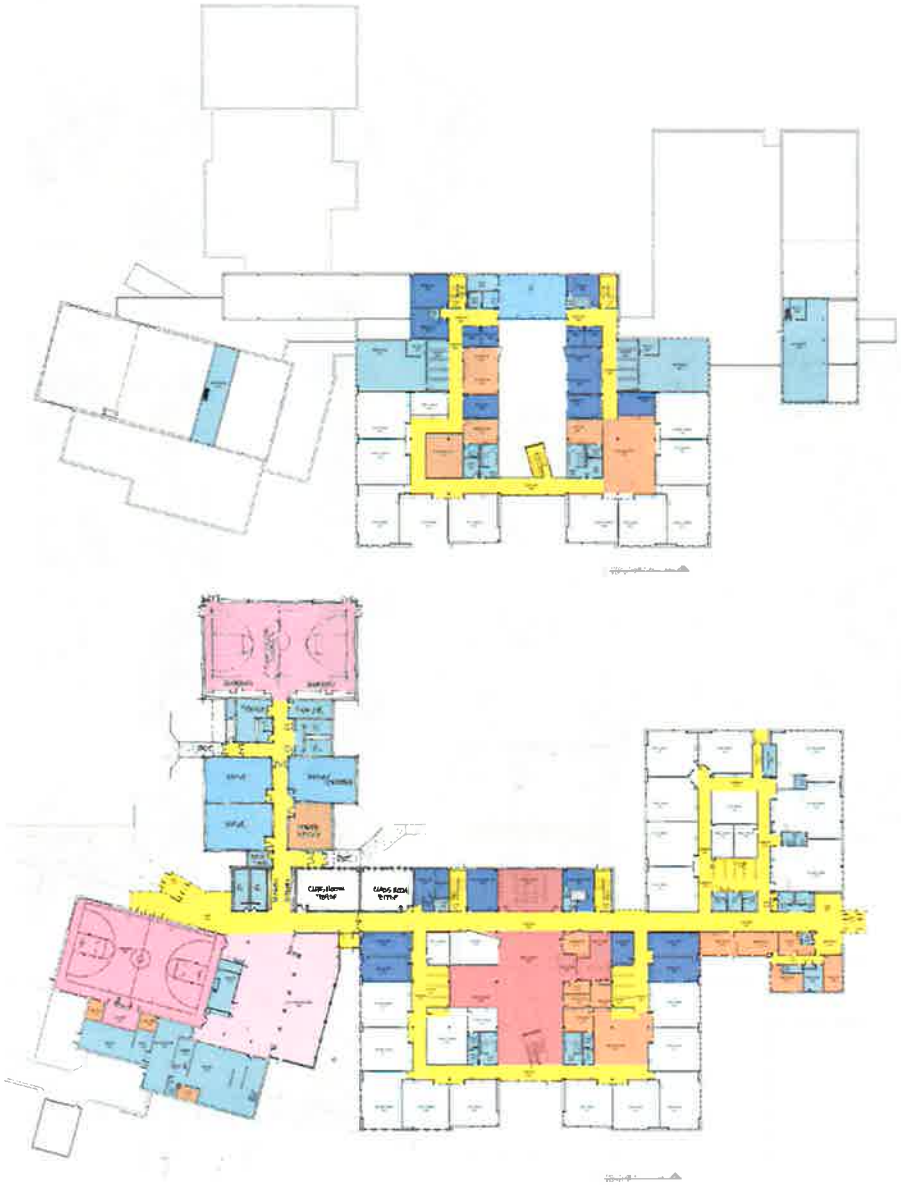
Robert Asp

Design Capacity:	**750**
Sections Per Grade:	**6**

EXECUTIVE SUMMARY

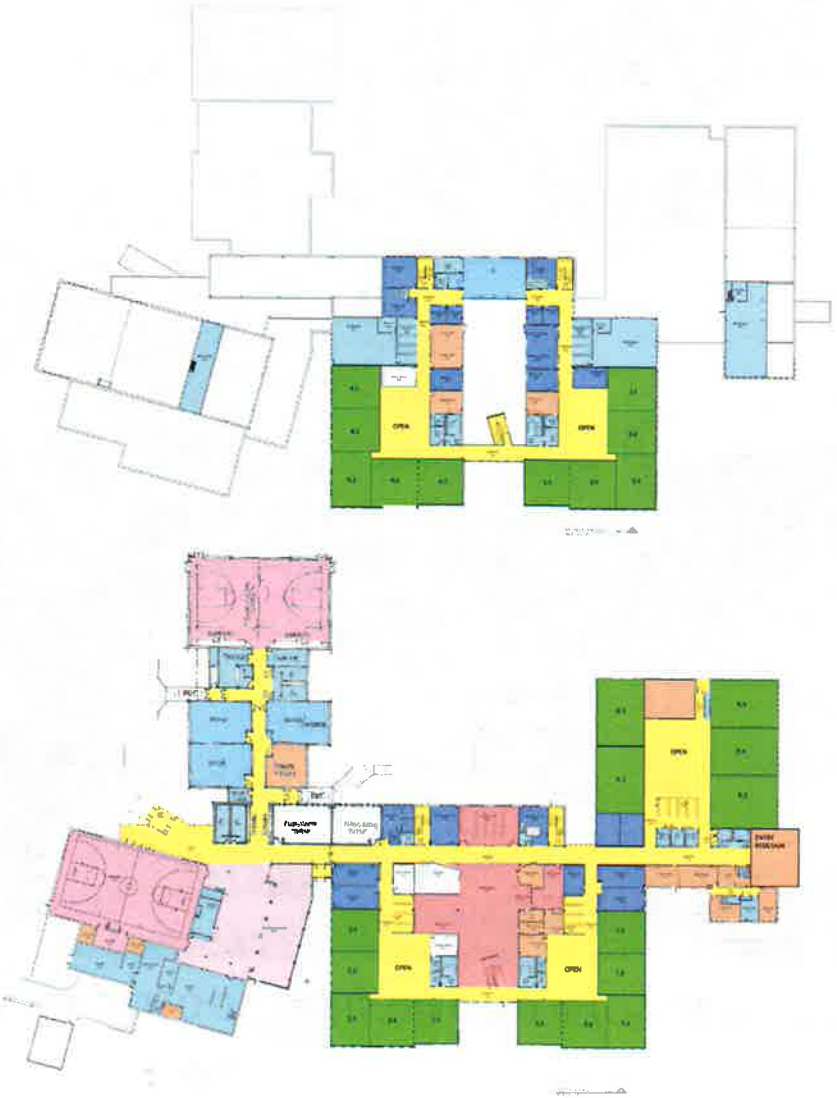
Conceptual Floor Plans

S.G. REINERTSEN ELEMENTARY - EXISTING UTILITY PLAN



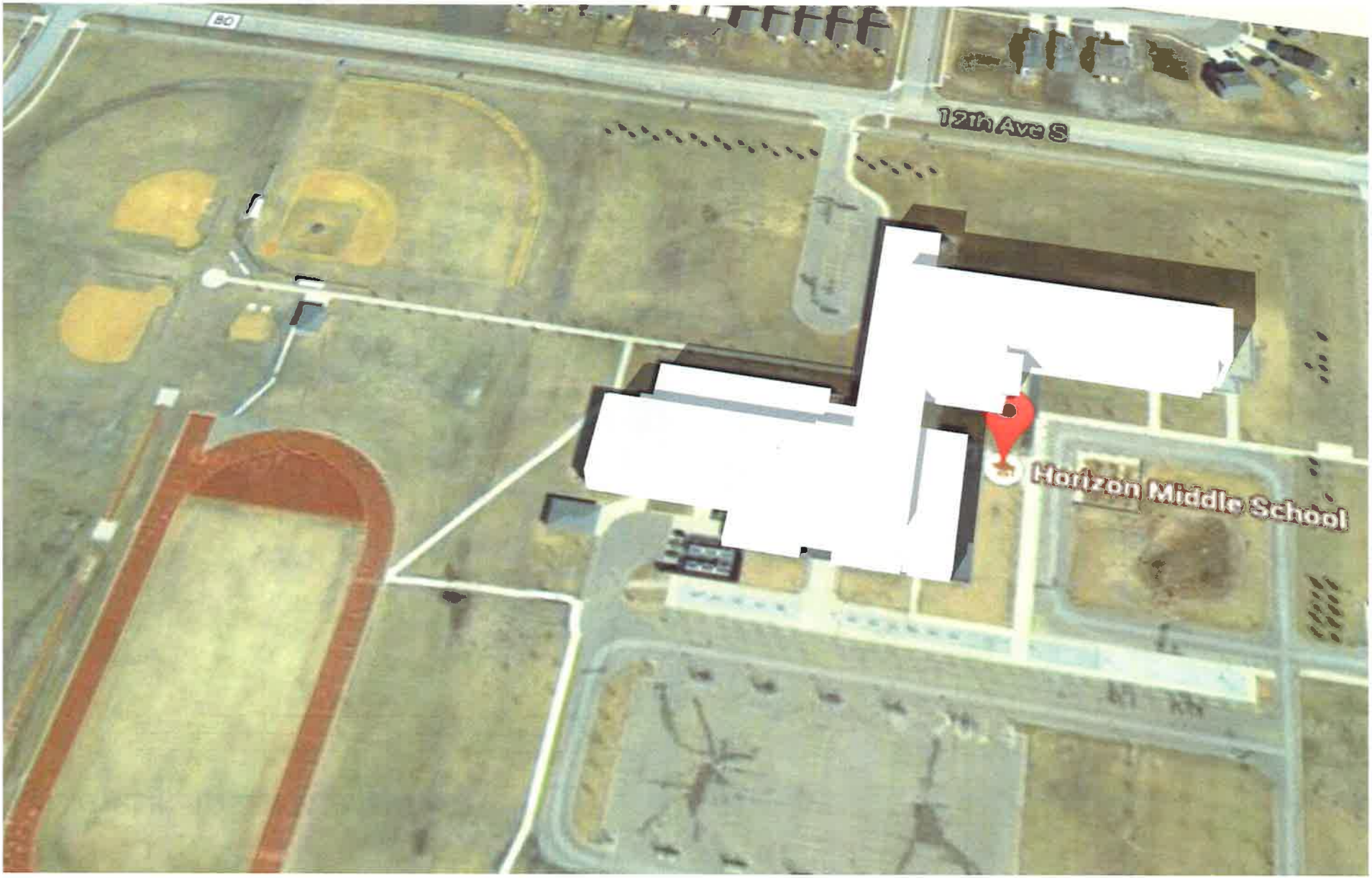
S.G. REINERTSEN ELEMENTARY

S.G. Reinertsen	
Design Capacity:	625
Sections Per Grade:	5

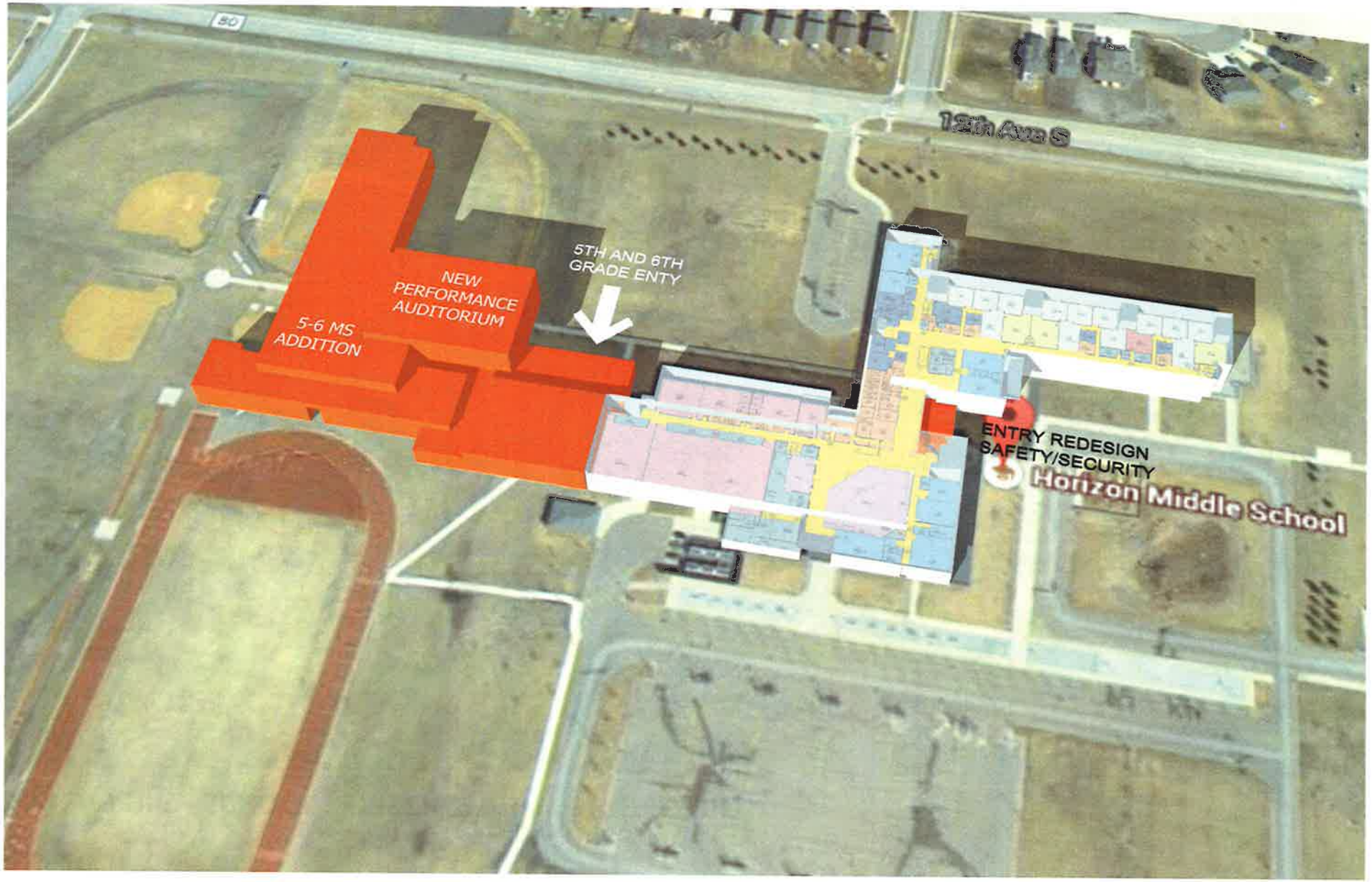


- Administration Staff
- Art/Music/Tech/FACS
- Assembly/Dining
- Circulation
- Classrooms
- Media Center/Computer
- Physical Education
- Laboratory
- Special Education
- Support
- District Wide Program Spaces
- New Learning Spaces
- Flex or Open Learning Spaces
- Removable Wall

HORIZON MIDDLE SCHOOL - EXISTING 3D AXONOMETRIC

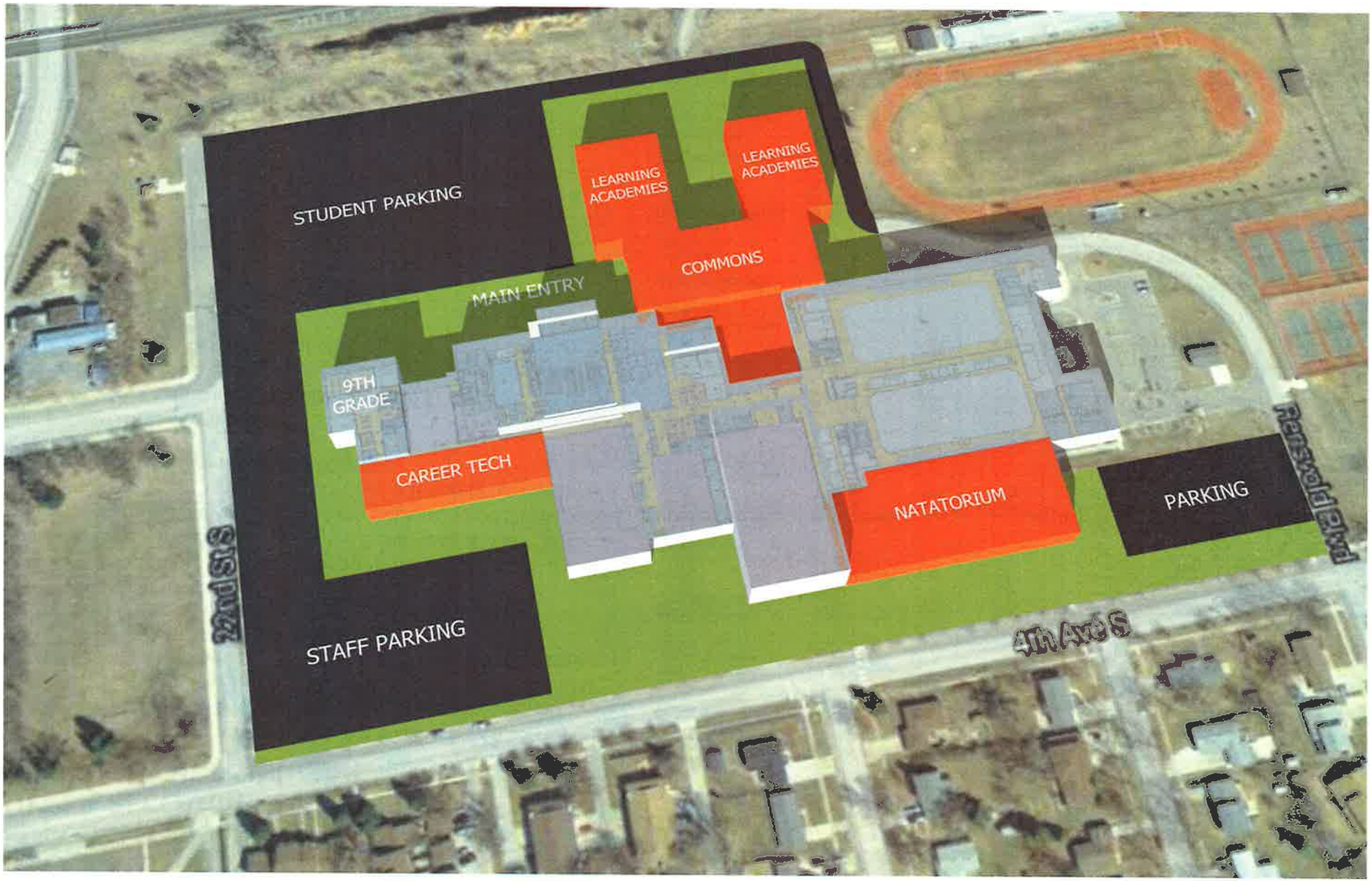


HORIZON MIDDLE SCHOOL



MOORHEAD HIGH SCHOOL - EXISTING 3D AXONOMETRIC

MOORHEAD HIGH SCHOOL



RESULTS & RECOMMENDATIONS — CONCEPTUAL COST SUMMARY

Cuningham Group developed an estimated cost analysis based on projects of similar scope and scale. The estimate is divided by site, and five categories: Heavy, Medium and Light Remodeling, Learning Furniture Updates, and Site Improvements. In addition, the Future Projects Section on the next page illustrates the Future Options for the District.

Heavy and Medium Remodeling

Heavy and medium remodeling areas throughout the District focus on security/safety improvements along with modifications to support 21st Century Learning. The costs by school are: Ellen Hopkins, $2.9 Million; Robert Asp, $2.8 Million; S.G. Reinertsen, $2.7 million. Security/safety upgrades at the High School will cost approximately $300,000.

New Elementary School Construction

Construction of a New Elementary School will require 17 acres of land to be purchased on a site yet to be determined. Construction of a 114,500 sq. ft. K-4 Elementary School would cost a total of about $24.9 million, to open for the 2018-19 academic year.

School/campus	*Area*		*Cost per SF/Unit*	*construction cost*	*total project cost*	*Comments*
Ellen Hopkins Elementary	111,000	sf existing			**$ 2,900,000**	
Heavy Remodeling	500	sf	$120	$ 60,000	$ 75,000	*Entry reconfiguration - Security/Safety*
Medium	11,600	sf	$90	$ 1,044,000	$ 1,305,000	*should include furniture*
Light	29,900	sf	$40	$ 1,196,000	$ 1,495,000	
Learning Furniture Updates	38	qty [2]		$ -	$ -	
Site Improvements	-			$ -	$ -	
Robert Asp Elementary	98,515	sf existing			**$ 2,900,000**	
Heavy Remodeling	500	sf	$120	$ 60,000	$ 75,000	*Entry reconfiguration - Security/Safety*
Medium	11,560	sf	$90	$ 1,040,400	$ 1,300,500	*should include furniture*
Light	29,910	sf	$40	$ 1,196,400	$ 1,495,500	
Learning Furniture Updates	38	qty [2]		$ -	$ -	
Site Improvements	-			$ -	$ -	
S.G. Reinertsen Elementary	106,000	sf existing			**$ 2,700,000**	
Medium	13,900	sf	$90	$ 1,251,000	$ 1,564,000	*Entry reconfiguration - Security/Safety*
Light	23,130	sf	$40	$ 925,200	$ 1,156,500	
Learning Furniture Updates	38	qty [2]		$ -	$ -	
Site Improvements	-			$ -	$ -	
New K-4 Elementary	*750 students*				**$ 24,900,000**	
Site Purchase	17	acres	$40,000	$ 680,000	$ 680,000	
New Construction	114,500	sf	$170	$ 19,465,000	$ 23,358,000	
Site Construction	17	acres	$75,000	$ 1,275,000	$ 1,530,000	
Horizon Middle School	228,000	sf existing			**$ 800,000**	
Medium	5,000	sf	$90	$ 450,000	$ 562,500	*To connect to 5-6 MS*
Light	5,000	sf	$40	$ 200,000	$ 250,000	*Acoustical at Commons*
Learning Furniture Updates	52	qty [2]		$ -	$ -	
Site Improvements				$ -	$ -	*see new 5-6 for costs*
5-6 Middle School Addition	*1200*				**$ 43,100,000**	*1300 student option*
New Construction	195,000	sf	$180	$ 35,100,000	$ 42,120,000	*Includes Perf Arts Center and entry reconfiguration - Security/Safety*
Site Construction	8	acres	$100,000	$ 800,000	$ 960,000	
Probstfield Center for Ed	82,800	sf existing			**$ 700,000**	*Kitchen remodeling is summer 2015*
Light	12,000	sf	$40	$ 480,000	$ 600,000	*Expansion of Early Learning*
Site Improvements	1	job	$60,000	$ 60,000	$ 75,000	*Playground Equipment*
Moorhead HS	334,385	sf existing			**$ 300,000**	
Heavy Remodeling	500		$120	$ 60,000	$ 75,000	*Entry and exit reconfiguration - Security/Safety*
Learning Furniture Updates	52	qty [2]		$ -	$ -	
Site Improvements - HS	1	job	$200,000	$ 200,000	$ 250,000	*Improve site safety*
Site to be Determined	20,000				$ -	*For ALC, ABE, Outreach*
Aquire building						*Potential to purchase as a separate deal*
Site Improvements				$ -	$ -	
Transportation Center	15,600	sf existing			$ -	*Holding Pattern for 6-10 years*
Bldg & Site Renewal				$ -	$ -	
Total (2018)					**$ 78,300,000**	

RESULTS & RECOMMENDATIONS — FUTURE PROJECTS

New High School Option

Construction of a new 2,250 student High School in addition to repurposing the old High School Facility into a Community Center will cost approximately $109 Million.

Building a major addition to the High School to replace the 1966 section of the existing facility and constructing a new pool area holds a price tag of $59 million.

Notes

- Total Project Costs include soft costs such as fees, management and District contingency. A 20% factor is used for large projects; 25% for small projects.
- Furniture can be based on a per Learning Space Cost and should be included when assembling a Final Budget.
- Costs are in January, 2015 dollars.

FUTURE PROJECTS

School/campus	*Area*		*Cost per SF/Unit*	*construction cost*	*project cost*	*Comments*
New High School Option	*2250 students at 200 sf/student*				$ 109,000,000	
New Construction	450,000	sf	$180	$ 81,000,000	$ 97,200,000	
Site Purchase	40	acres	$40,000	$ 1,600,000	$ 1,920,000	*In addition to owned 40 acres*
Site Construction	80	acres	$100,000	$ 8,000,000	$ 9,600,000	
Addition at Moorhead HS	*2250 students total capacity*				$ 59,000,000	
Demolition	137,000	sf	$20	$ 2,740,000	$ 3,288,000	
New Construction–HS	200,000	sf	$180	$ 36,000,000	$ 43,200,000	
New Construction–Pool	35,000	sf	$250	$ 8,750,000	$ 10,500,000	
Remodeling	20,000	sf	$120	$ 2,400,000	$ 3,000,000	
Site Modifications	25	acres	$75,000	$ 1,875,000	$ 2,340,000	
Future New Elementary	*750 students*				$ 25,000,000	*If District continues to grow*
New Construction	114,500	sf	$170	$ 19,465,000	$ 23,360,000	
Site Construction	15	acres	$75,000	$ 1,125,000	$ 1,350,000	*Assumes use of owned land*

CLOSING REMARKS/NEXT STEPS

The Task Force will continue moving forward, working on programming as well as more building development, utilizing a process that will include staff, students, parents and administration. Included in the next steps are the following:

- Board Action on Facilities Master Plan - February 23, 2015
- Financial Information (tax impact)
- Demographic Report (March, 2015)
- Community Survey
- Possible Bond Referendum
- Programming - Elementary, Middle and High School; Off Site Programs

Moorhead Area Public Schools has taken a comprehensive and strategic approach to looking at the future, and the impact the future will have on each facility within the District. This Facilities Master Plan will serve the District in providing a clear and simple reference guide for making day-to-day decisions about future growth and expansion.

The following pages outline the actual steps and information generated at each Charrette Workshop. In the end, the resulting recommendations stem from the accumulation of information generated within each step along the way.

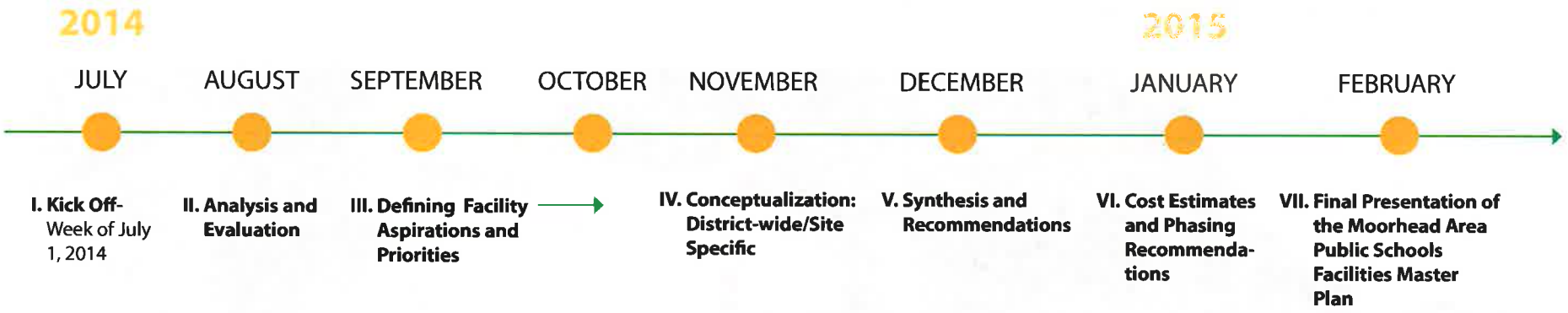
The process used to kick-off the Facilities Master Plan effort included a range of activities and background research to lay a solid foundation and to maximize the participation of all stakeholders.

The Kick-off Workshop Visioning Session took place in September, 2014, followed by subsequent workshop sessions in October, November and December. Following the workshop sessions, a formal presentation to the School Board took place in December, 2014. A final School Board Presentation is set to take place in February, 2015.

The following pages describe each workshop session in more detail.

PROCESS SUMMARY

This schedule was used to help define the steps of the Master planning effort and to communicate the opportunities for participation and timing of Stakeholder involvement.



OVERVIEW: WORKSHOP 1 – DAY 1

SEPTEMBER 15, 2014

PURPOSE

To co-create a clear and compelling Shared Facility Vision Statement that would help inform the Master Plan and Facility Principles.

WELCOME

A welcome video recording by Dr. Lynne Kovash (District Superintendent) was presented to the participants.

INTRODUCTIONS AND HIGHEST HOPES

Participants were asked to introduce themselves and simply express their highest hope for this Master Plan effort.

PROCESS OVERVIEW

Brandon Lunak (Assistant Superintendent) presented the overall project schedule and communication protocol, in tandem with defining the purpose and expected results of the Master Planning Workshop.

PROVOCATIONS

Provocation videos were introduced as conversation starters. After each video was shared, time was taken to reflect on everyone's reactions. Did they agree with what was presented – or not? Why or why not? Taking the time to hear and discuss everyone's reactions is an important component to these conversations.

MAJOR FORCES OF CHANGE

Acknowledging and respecting the unique perspective that each individual brings to this process, the Master Plan Task Force participants were asked to identify the major forces of change that they believe will impact the Moorhead School District over the next 10 years. Borrowing from Tim Brown's book, *Change By Design*, on the significance of animating our conversations, participants were asked to graphically represent their ideas.

INNOVATION

A presentation was given on the value of innovation, the need for change, new ideas and a paradigm shift in education today; emphasizing the value of creativity in fostering innovation in education, but more importantly in the world today. The Task Force was asked to reflect on the presentation and consider the value of innovation with respect to Moorhead Area Public Schools.

LIMITING BELIEFS

The Task Force was asked to identify personal and/or institutional beliefs that might prevent or limit them in facing the challenges presented by the major forces of change impacting Moorhead Area Public Schools.

21ST CENTURY LEARNING

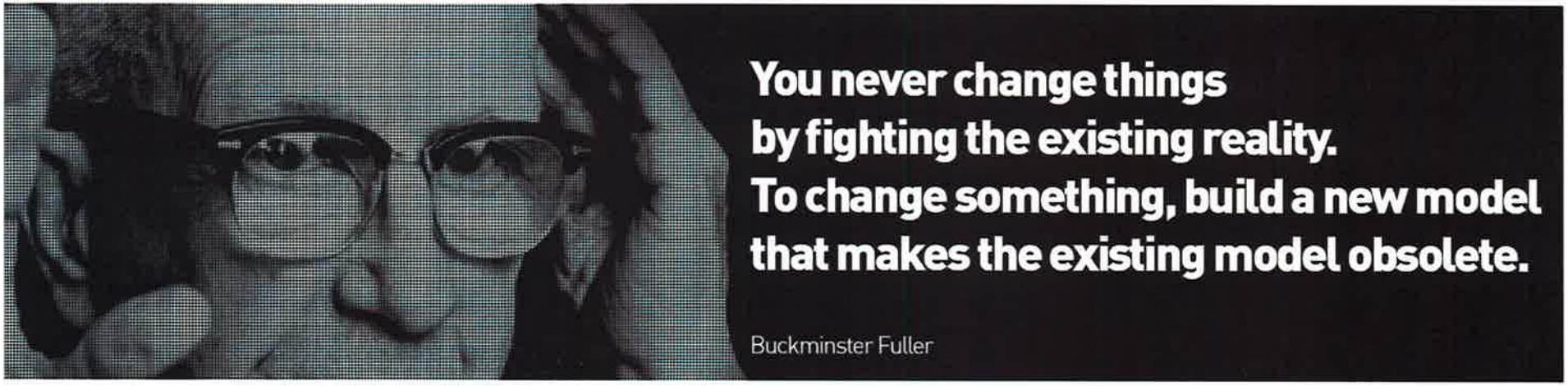
A presentation was shared on the value of personal and ubiquitous learning; flexibility and adaptability; collaboration; project based learning and advancements in technology. The Task Force was asked to reflect on the presentation and consider the value of incorporating 21st Century Learning in Moorhead.

SHARED VISION - I SEE / WE SEE

The first step of creating a shared vision involves being clear about individual expectations. Participants were invited to individually write down "**I see...**" statements in response to the following question:

> *Imagine the district is successful beyond your highest expectations, and you're giving an international team of educators a tour of the district in the year 2025. What do you see?*

The individual statements were discussed in small groups to create "**We See...**" statements.



OUTCOMES:
HIGHEST HOPES:

Participants were asked to introduce themselves and simply express their highest hope for the outcome of working together. They are as follows.

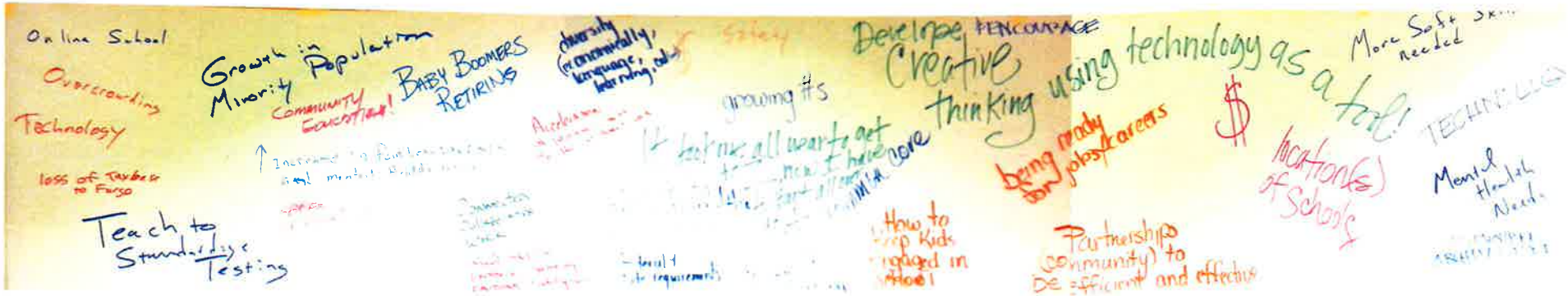
- Future use of facilities. Facilities that are relevant and useful in the future; facilities may be either existing or new.
- Make a great system even better; maximize use of facilities.
- Listen. To have the voices of the community and schools be heard.
- Wise use of tax money to best educate children.
- Follow-through
- Deliver on expectations
- Listen to the teacher's voice.
- Unconventional approach
- Remember the value of technology
- Shape facilities to be fluid with the environment.
- Excited to see long term planning
- Voice for future students
- Plan Properly for growth of:
    - The District
    - The Community = bridge gap. Bridge the gap between the District and the Community
- Provide value for everyone; biggest bang for our buck
- Provide community use of facilities (e.g. seniors).
- Plan thoughtfully for growth.
- Opportunities for ALL learners. Provide an all inclusive learning environment.
- Conducive to the way all children learn.
- Located appropriately
- The whole community benefits
- Building facilities and technology that address the needs of the students.
- Satisfy the needs of the District in a responsible manner for now and the future.
- Create a plan to address growth.
- Helpful Ideas. Generate ideas that would be helpful to the education system.
- Make sure we are giving kids the best opportunities in the future.
- How will we be addressing growth - now and future.
- Look at facility design to best benefit the children.

MAJOR FORCES OF CHANGE:

With the intent of harnessing the unique perspective that each individual brings to this process, the Facility Master Planning Task Force participants were asked to identify the major forces of change that they believe will impact Moorhead Area Public Schools ISD 152 over the next 13 years, or the length of time a child is in school. Their graphic ideas are captured on the following pages:

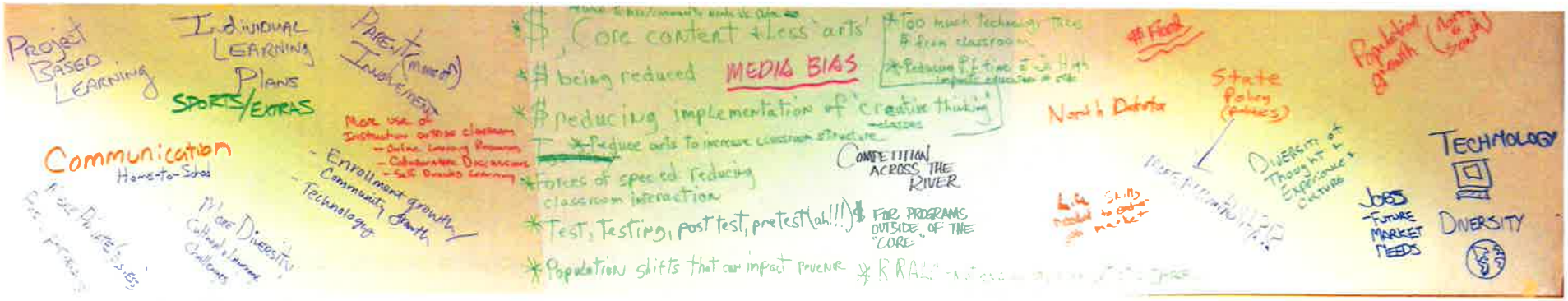
PAPER ROLL:

- Online School
- Overcrowding
- Technology
- Loss of tax base to Fargo
- Teach to standardize testing
- Growth in minority population
- Community education
- Increase in families in crisis and mental health issues
- Sprawl of city
- Baby boomers retiring
- Connected Collaborative work
- Soft skills listening, speaking, emotional intelligent
- Diversity (economically, language, learning)
- Acceleration of workforce shift to thought – based work
- Cost associated with safety
- Growing Numbers
- It took me all year to get to Z, now I have to start all over at A
- Technology use within the curriculum
- Federal and state requirements
- Early learning
- Common core
- Develop and encourage creative thinking using technology as a tool!
- How to keep kids engaged in school
- Being ready for jobs/careers
- Partnerships (community) to be efficient and effective
- Costs associated with locations of schools
- More soft skills needed
- Technology
- Mental health needs
- Sustainable architecture
- Project based learning



PROCESS

Defining Facility Aspirations and Priorities - Workshop 1 - Day 1



- Communication
- Home-to-school
- More private (Business)
- Public Partnerships
- More diversity - cultural and language challenges
- Individual learning plans
- Sports/extras
- Parent Involvement (more of)
- More use of Instruction outside the classroom
  - Online learning resources
  - Collaborative discussions
  - Self directed learning
- Enrollment growth, community growth
- Technology
- What teachers/community needs vs. administration
  - Funding, core content and less 'Arts'
  - Funding being reduced
  - Media bias
  - Funding reducing implementation of creative thinking' classes
  - Reduce arts to increase classroom structure
  - Forces of Special Education - reducing classroom interaction
  - Test, Testing, post test, pretest (ah!!!)
  - Population shifts that can impact revenue
  - Red River Area Learning Center (RRALC) not enough gym or art space
  - Too much technology takes funding from classroom
  - Reducing Physical Education time at Jr. High impacts education of students
  - Competition across the river
  - Funding for programs outside of the "Core"
- North Dakota
- Life skills needed to enter the job market
- State policy (politics) - more accountability?!?!
- Diversity of thought, experience and culture
- Population growth (north vs. south)
- Jobs - future market needs
- Technology - Diversity

LIMITING BELIEFS

The Task Force was asked to identify personal and/or institutional beliefs that might prevent or limit them in facing the challenges presented by the major forces of change impacting Moorhead Area Public Schools.

- Honor the past
- Finances - not enough money; taxes are too high
- Comfort in familiarity
- Outside forces - State, Federal
- North Dakota - parents bring students because of superior Special Education Programs
- Road to Hell is paved with good intentions
- Public Perception status quo
- Good enough for me
- Fear of change
- Mistrust
  - Community questioning
  - Administration
  - Politicians
- Preconceptions on idea teaching (e.g. class size)
- Minnesota versus North Dakota's service
- Leaders who don't have kids in the system now
- Cultural / Language / Custom barriers
- Moorhead is an education town
- Cannot afford to do this
- Kids need structure

Public schools did not exist forever. They did not come out of the forehead of a Greek or Roman God; they were contrived by ordinary men and women...and for just this reason they can be rebuilt or reconceived, dismantled or replaced, not by another set of Gods but by plain men and women. You and I can leave school as it is, change it slightly, or turn it inside out and upside down.

Jonathan Kozol

21ST CENTURY LEARNING

A presentation was shared with the task force that identified the emergence of new approaches to learning that draw upon a range of insights into the human brain, the functioning of human societies, and learning as a community-wide activity. The presentation addressed the value of personal and ubiquitous learning; flexibility and adaptability; collaboration; project based learning and advancements in technology. The Task Force was asked to reflect on the presentation and consider the value of incorporating 21st Century Learning in Moorhead.

REACTIONS:

- We need to be thinking creatively to address the uncertainty of the future
- Create spaces that are conducive to creative learning and how children learn differently
- Adaptation to different learning styles
- Core competency focused
- Original ideas that have value = creativity
- Value of music and the arts
- Life skills need to be taught – practical application
- Personalized learning that taps into their joy
- Experiences that help all kids feel "Normal"

WE SEE...

The first step in creating a shared vision involved being clear about expectations. Participants were invited to individually write down "I see..." statements in response to their vision. The individual statements were not shared in the whole group setting, but rather they were discussed in small groups to create "We See..." statements.

GROUP 1

- Partnerships
  - Staff
  - Board
  - Community
- Passion
  - To teach
  - To learn
- 4 C's
  - Communication
  - Collaboration
  - Critical thinking
  - Creativity
- Inclusion
  - Community
  - Unity
- Fiscal Responsibility $`

Group 2

- Modern and community based facilities
- Culture: relationship and rigor
- Student engagement with technology and active participation
- Relevant preparation
- Students collaborating
- Community partnerships

Group 3

- Learning can be anywhere (not just in the "classroom")
- Multiple teachers working together
- Resources - online available 24/7/365
- Students flow (Can learn anywhere)
- Students engaged (projects not just work sheets)
- Arts, Sports/Community Use
- Elementary schools = 600 students in order to be student and family-friendly
- Embedded services expanded
- Students involved in the community
- Multi-use spaces - flexible spaces
- Technology infused - no labs

Group 4

- Excited students engaged in life-long learning
- The system aligned to provide an opportunity for all to be successful
- Sustainable facilities and a flexible, open environment
- Receptive to community spaces, learning, commitment

Group 5

- Personal Learning Environments
- For teacher's professional development
- For small group, large group, and individual instruction
- Where cross-curricular instruction and project based learning is possible

Cultural spaces

- That accept ALL abilities of all learners

PROCESS

Defining Facility Aspirations and Priorities - Workshop 1 - Day 1

- Where families can connect/conference
- That encourage community involvement through the arts/service learning
- That promote positive energy in the building for staff/students/community

Physical Space

- Green
- Inviting
- Open
- Light that's natural
- Creative/Collaborative spaces
- That allow children to move
- Allow all ages to perform
- That avoid noise pollution
- Are safe and secure
- That promote community/school colors

Students Learning

- Spaces that support active learning
- That creates, collaborates, connects, and allows for critical thinking
- That embraces technology
- That collaborates with students/community

Post-its Comments

- Technology Infused where appropriate
- Flexible and Adaptable spaces
- Open campus
- Energy efficient facilities
- Flexible learning spaces accommodating flexible teaching styles/methods
- Environmental connection to nature
- Multiple pathways to success
- Kids succeeding in the "here and now" not just focused on "competing in the future marketplace"
- Intersection of Arts, Vocation, Athletics, and involvement
- Creative problem-solving
- Innovation
- High educational outcomes
- Applying
- Connected campuses - connections from K-12
- Students leading peers
- Challenge atmosphere
- Engaged community partners
- Life-long learning
- Engaged students hungry to learn more
- Happiness
- Students that feel secure
- High morale among stakeholders…
- Excitement
- Pride

OVERVIEW
WORKSHOP 1 - DAY 2
SEPTEMBER 16, 2014

PURPOSE

To review the Shared Facility Vision Statement and to develop the Facility Principles.

VISION STATEMENT

Prior to concluding the activities of Day 1, the "We See" groups were each asked to select a representative to meet before the Day 2 visioning session at 6 am on September 16, 2014, to craft a vision statement from the results of the visioning exercises of Day 1.

PROVOCATIONS AND REFLECTIONS

A provocation was shared to help participants imagine the kinds of spaces that can be created to support their Vision for Learning at Moorhead Area Public Schools.

CREATING FACILITY PRINCIPLES

Based on the Vision Statement, reflections on the efforts and provocations of the session so far, the Task Force was asked to develop a draft of Facility Principles by asking themselves: "What can we commit to?"

OUTCOMES: VISION STATEMENT

Representatives from each team during the "We See" visioning exercise arrived early to participate in crafting a Vision Statement. The Vision Statement would factor the results of the group exercises and provocations shared with the Task Force and combine them with the in-depth understanding of the educational needs, desires and values of the Moorhead community fashioning a statement that would serve as the primary basis of the Moorhead Area Public Schools Master Plan. The Vision Statement is as follows:

"We envision safe, inviting, and inclusive learning environments that support a sustainable culture of excellence in 21st Century Learning, while fostering meaningful and collaborative community partnerships."

PROVOCATION & REACTIONS - HIGH TECH HIGH

The second provocation shown was about the successful High Tech High programs, which are gaining national attention. They utilize a very personalized, hands-on, project-based approach to learning, engaging Learners in the active "Construction" of their learning versus the "Instruction". Transparency abounds and ALL learning is celebrated.

FACILITY PRINCIPLES

Beginning the process of creating Facility Principles, the Task Force identified 'Issues,' also described as the big ideas, that the Master Plan should attend to in looking at facilities. These were sorted into categories after additional review, summarizing and removing redundancies; the following contains the final Facility Principles that will carry the process forward.

Attractive and Inviting

Moorhead Area Public Schools (MAPS) is committed to being a community development partner.

This means:

1) Promote our assets.
2) Develop relationships through community engagement.
3) Investing in people and facilities that IGNITES experiential learning.

Community

MAPS is committed to fostering community and engagement within schools inclusive of all stakeholders within the district.

This means:

1) Facilities will share quality instructional and gathering space with Community Ed, community partners and citizens.
2) Explore strategic community partnerships that include shared investments of equipment, facilities and people.

Future Focused / Adaptable and Flexible
(combines one each from Teams 2 and 4)

Moorhead Area Public Schools is committed to providing adaptable and flexible facilities for our changing community and educational needs.

This means:

1) Ability to flexibly scale current and future facilities to reflect growing or reducing populations.
2) Facilities will provide environments for active learning for all learners, learning styles and instructional delivery methods.
3) Facilities will allow space for staff collaboration and storage for efficient use of time and resources.

Student Centered

Moorhead Area Public Schools is committed to serving and inspiring innovative growth and learning to the Moorhead students, staff and community.

This means:

1) Facilities conducive to a well thought out E-12 Progression.
2) Programs and facilities available to foster growth to learners with varying learning styles and ages.

Quality and Excellence in Education

MAPS is committed to fostering quality and excellence in education.

This means:

1) Facilities will inspire and foster creativity, problem solving, collaboration and communication.
2) Facilities will have collaborative areas for active learning by all students and staff.
3) Facilities will have flexible spaces.
4) Facilities will enable teachers to promote 21st Century Learning and development of skills.
5) Facilities will serve all learners.

PROCESS

Defining Facility Aspirations and Priorities - Workshop 1 - Day 2

Technology

MAPS is committed to supporting evolving learning approaches through technology.

This means:

1) Support for reliable and agile technology tools.

2) Support for community and beyond using various online resources.

3) Providing technology to support integrated learning.

Safety

MAPS is committed to providing safe and secure learning environments for all community stakeholders

This means:

1) School facilities will leverage smart structural, environmental, technological and process design.

2) All students, staff and community are participants in creating a culture of safety.

WORKSHOP 2 – DAY 1
OCTOBER 7, 2014

PURPOSE

To review the Shared Facility Vision Statement and Facility Principles; share results/updates from past and parallel studies; and to customize a set of Facility Standards.

RECAP AND REFLECTIONS OF WORKSHOP ONE

Participants were asked to take a moment to reflect on the activities of the previous workshop, questions and thoughts on the workshop and the two video provocations shown in Workshop 1. The group also reviewed the Shared Vision Statement and Facility Principles that came as a result of Workshop 1.

PROVOCATIONS AND REFLECTIONS

A provocation was shared to help participants imagine the kinds of spaces that could be created to support their Vision for Learning at Moorhead Area Public Schools.

CREATING FACILITY STANDARDS

Participants were provided with a boiler plate set of facility standards to review in a small group exercise, with the goal of determining a set of standards the would serve as a baseline for value and quality for all the District Facilities.

REFLECTIONS ON WORKSHOP 1

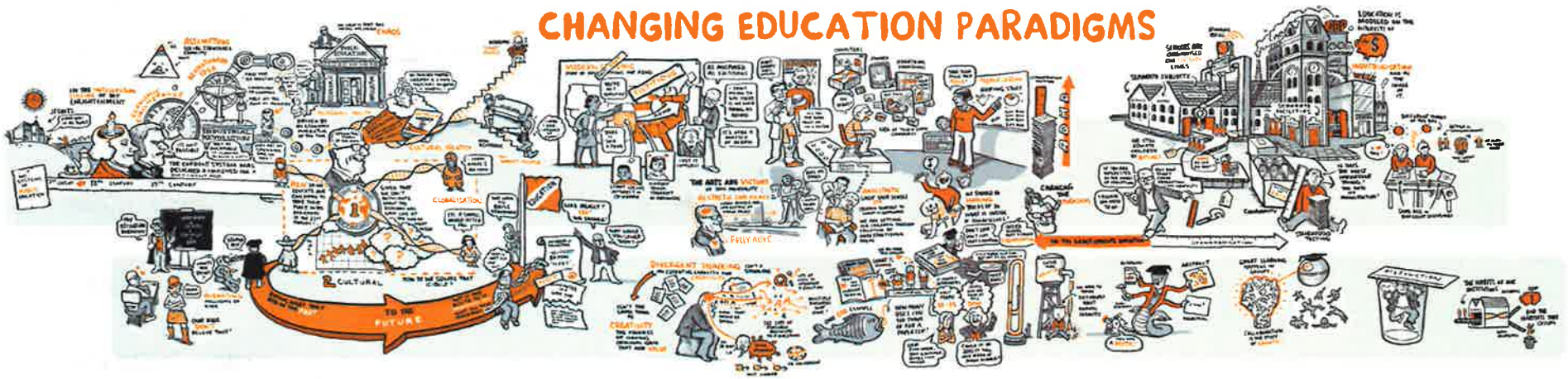
GENERAL REFLECTIONS AND QUESTIONS:

After a brief review of the activities of the previous workshop, including key results like the Shared Vision Statement and the Faclity Principles, the following thoughts were recorded.

1. Community and Staff input will be received during the completion of the GAP Analysis Matrices at each site. The GAP Analysis measures and evaluates a Facility's ability to support the Vision/Principles and Standards.
2. Both Principals and Teachers were involved in completing these.
3. Include a review of the last Master Plan in our background research.

SIR KEN ROBINSON VIDEO REFLECTIONS:

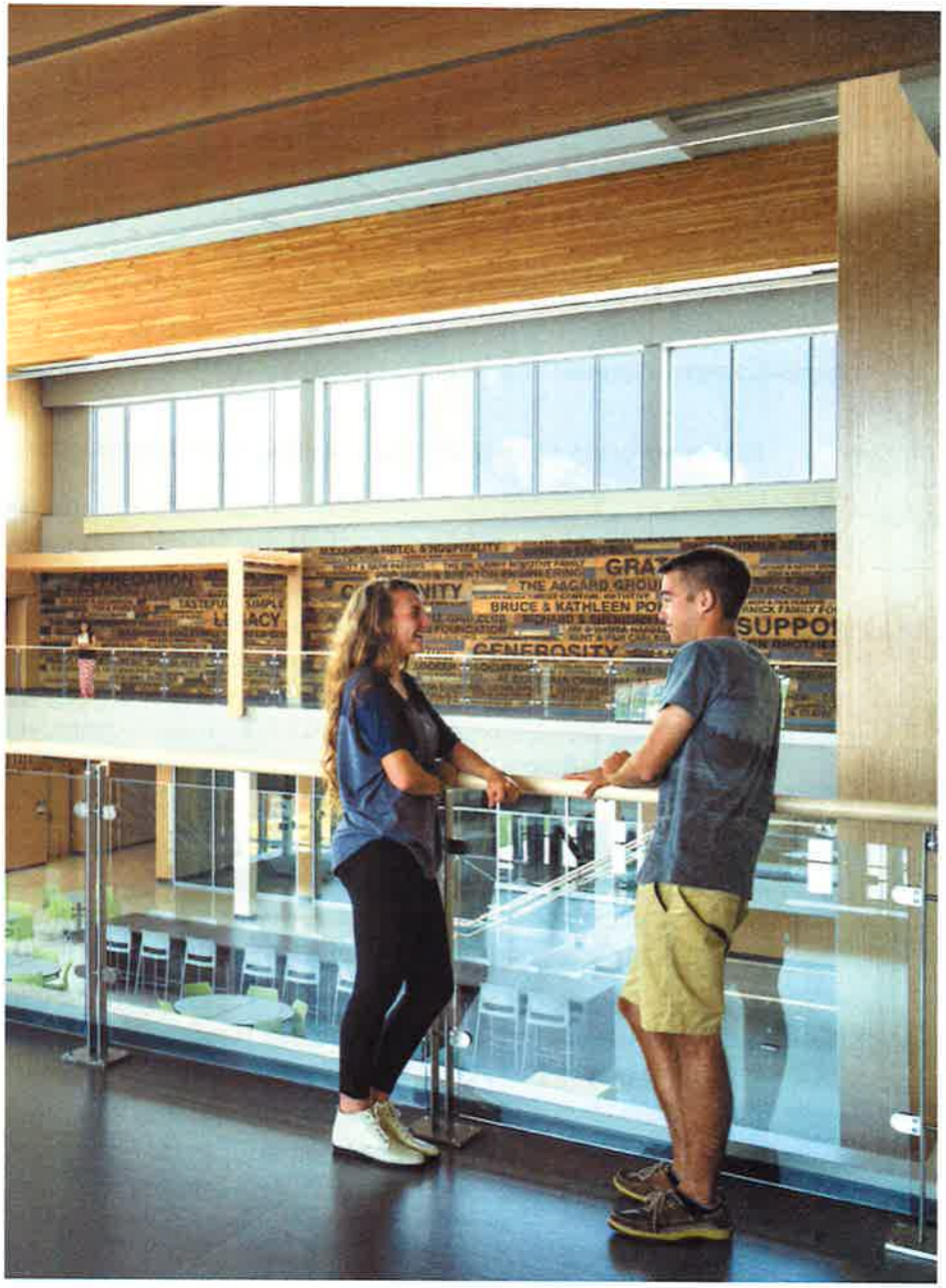
1. Messages have been consistent over the past 10 years, but facilities have not kept up
2. Reference Montessori Education
3. Share Examples "Virtual Tour"



PROVOCATIONS AND REFLECTIONS - WORLD'S GREATEST HIGH SCHOOL:

A brief video was shared with the group that provided a glimpse into the recently completed Alexandria High School. The video highlighted a variety of learning spaces and furnishings, the quality of light, aesthetic elements of the building and scope of the entire facility. The following is a list of the recorded reactions to the provocation:

1. Reduces Stress
2. Indoor Air Quality
3. "Show Me the Data"
4. Must support innovation
5. Flexibility
6. Versatility of Furnishings
7. Kids: Color that inspires
8. Publish square foot per student and Wells Fargo Article



FACILITIES DESIGN STANDARDS INTRODUCTION

The standards apply to all existing facilities in the District and to future construction projects. As the term "standard" implies, they are meant to establish guidance for value and quality for Moorhead Area Public Schools Facilities, though they will not be legally binding. They will be useful for District staff and consultants hired by the District to assure consistency, value and quality across all District Facilities as they are built or improved.

The Standards are grouped by "zones" of work, including Building, Interiors and Finishes, Systems, Site and Community/Off -Site. Definitions of Zones:

- Building: Organization and design of the individual buildings; their internal circulation and spaces
- Interiors and Finishes: Finer-scale issues relating to the materials and fixtures of spaces within the building
- Systems: Various infrastructure systems that operate within the building - mechanical, electrical, communication, technology
- Site: The grounds area outside the building, including drives, parking, fields and landscaping
- Community/Off -Site: Community based learning environments, or other environments not physically located at a Moorhead District facility

UNDERSTANDING AND USING THE STANDARDS

The following issues are important to consider:

1. The Standards do not cover every issue pertinent to overall facilities for Moorhead Area Public Schools. Instead, the Standards published in this study emphasize issues that need attention in the immediate and near term to meet the intent of the Facility Principles.
2. While consistency in building systems, massing, exterior/interior finishes and architectural expression is desirable, the Standards do not establish a particular architectural style or character for District Facilities.
3. Individual facilities may have programs unique to that site. The Standards are not intended to imply that all facilities should contain all programs, or locate programs.
4. When a site cannot implement a particular Standard due to site limitations, program location, costs or other restrictions, access to sites that meet the standard could serve as an alternative.
5. The Standards do not dictate or explicitly address the approach required to implement and meet them at each site. It will be left to the leadership team to recommend and clarify which of the following categories apply: retrofit/remodeling, renovation or new construction projects.
6. The Standards do not cover in depth Technology or Mechanical/ Electrical systems; reference other documents for this.
7. We believe that many of the Standards will have a positive impact on maintenance and operations. However, the impact of the Standards on staffing and equipment should be considered, particularly with standards that imply additional space.

The process for applying the standards to each site will start with administrative directive. It includes:

1. Understanding the facility principles and District-Wide facility standards.
2. Reviewing individual school summaries to understand the character of each site and its key issues.
3. Reviewing district priorities to ascertain priority work across all sites and recommendations.

FACILITY DESIGN STANDARDS - INDEX

Building

1. Basic Learning Space
2. Varied Space for Program Delivery
3. Student Gathering Space
4. Whole-School Assembly Space
5. Interdisciplinary Learning
6. Specialized Lab Space for Program Delivery
7. Shared Space for Programs
8. Special Services Needs
9. Space for Young Children and Parents
10. Places for the Individual
11. Space for Enriching Activities
12. Staff Resource and Collaboration Space
13. Adult Learning Space
14. Daylighting and Views
15. Accessible Buildings
16. Community Services Centers
17. Safety
18. Clear Main Entry
19. Welcoming and Respectful Main Office
20. Health Services Space
21. Facilities for Media Centers
22. Food Service
23. Technology Space
24. Storage Space
25. Plumbing Core
26. Building and Energy Codes
27. Internal Circulation
28. District Administration

Interiors and Finishes

29. Flexible/Adaptable Space
30. Appropriately-Scaled Space
31. Signage and Display
32. Experiential Interiors
33. Furniture and Finishes for Learning

Systems

34. Quality HVAC/Plumbing
35. Ample Electrical Service and Systems
36. Technology Infrastructure and Hardware
37. Technologically Enhanced Systems

Site

38. Safe and Accessible
39. Traffic Control
40. Parking and Service Access
41. Landscape Character
42. Safe & Accessible Outdoor Play
43. Outdoor Learning Settings
44. Planned Expansion
45. Permanent Facilities

PROCESS

Defining Facility Aspirations and Priorities - Workshop 2 - Day 1

Community / Off-Site

46. Community/Off-Site Learning Settings
47. Joint-Use Facilities
48. Connections between School Sites
49. Transportation

BUILDING

1. Basic Learning Space

Design with finishes and fixtures that promote collaborative and creative project work and allow for the design of learning experiences. Basic learning spaces, at all levels, will be generously sized for variable teaching layouts, technology and individual or group arrangements. Characteristics include:

1) furnishings that can be used flexibly
2) designed for multiple ages, learning/teaching styles, changing class sizes and special learning needs
3) hands-on project space; sinks, adequate cabinets
4) visual display media and properly located presentation technology
5) visual connections to outdoors and to public areas
6) standard guidelines for classroom space
7) spaces for visual and/or collaborative activities

2. Varied Space for Program Delivery

Provide a variety of sizes and character of learning space for different teaching and learning modes. Each school should have a variety of spaces to serve different purposes and group sizes, and that can be laid out in a variety of ways. Provide:

1) break-out space for groups to use throughout the basic learning space
2) efficient, flexible and adaptable space with consideration to sound issues and visibility
3) spaces for student groups/teams
4) spaces for independent and individual work
5) spaces for interdisciplinary work
6) space for extended projects and creative experiences
7) spaces permitting a "small school" learning experience

3. Student Gathering Space

A student's social development is part of their education and growth. The school facility will provide spaces for class groups and students to gather, interact and study in a safe, manageable and inviting environment. Example strategies include:

1) providing age appropriate multi-use spaces for gathering groups of varying sizes
2) develop outdoor gathering spaces
3) Provide bright, inviting, comfortable, flexible and moveable furnishings

4. Whole-School Assembly Space

Each school will have a space that allows gathering of the entire student and staff population, thereby supporting and strengthening school community spirit. Design for multiple uses (e.g. a high school double gym used for speakers and events as well as games). Desirable characteristics include:

1) sound systems/presentation technology to support flexible use and to allow community learners to hear better
2) flexible seating and storage space/systems for folding chairs
3) accessible "stage" area

5. Interdisciplinary Learning and Basic Learning Space

The school organization and its individual spaces will be designed to allow interdisciplinary teaching and teaming, and to strengthen natural connections between subject areas. Learning Spaces grouped with other facilities allow teachers of different subjects to work together with an identified group of students. Provide:

1) specialized space within the rooms; sinks/storage/tables with finishes for potential "wet" activities
2) physical and visual openings (doors, windows) to support connections among the spaces
3) staff collaboration spaces
4) easy access to technology
5) easy access to 'making' places where production and construction can occur

6. Specialized Lab Space for Program Delivery

Each school will have specialized lab/studio spaces for programs whose needs cannot be provided in a Basic Learning Space. All labs/studios will be designed with adaptability and flexibility in mind, so that changing program offerings are supported, and so that the spaces may be usable by students and community. Examples of programs requiring specific space include:

1) performing arts
2) visual arts
3) science
4) applied technology
5) TV/video/communications
6) career emphasis areas
7) family and consumer science

7. Shared Space for Programs

Shared use of learning spaces, labs, activity areas, and grounds is required for many programs, e.g. electives, Community Education and after school child care. Design facilities to intentionally support this sharing while recognizing need for security. Some guidelines:

1) secure and adequate storage for different programs
2) provisions for special needs of users (e.g. childproofing, regulatory requirements)
3) basic facilities such as heat/ventilation, toilets or food prep areas available for off-hours uses
4) identity of each program should be reflected in some visible way, through signage, dedicated space, or zone within the building

8. Special Services Needs

Provide space in each facility to support all students with special needs. Space is needed both to facilitate inclusion within the classroom and for special services in specific settings. Design an atmosphere conducive to learning, near other learning spaces, to meet the student's special physical, sensory, and emotional needs. Standards should be developed for spaces so as not to sacrifice for the needs of other spaces. Provide for:

1) learning support centers
2) space for related service providers
3) break-out spaces for individualized instruction
4) spaces within learning areas for one-on-one work, additional staff
5) assistive technology
6) ample storage space
7) adaptability for short-term specific needs

9. Space for Young Children and Parents

The school system serves its learners well by reaching them at an early age. Provide facilities that address the specific needs of young learners, including adequate support space. Address the following needs:

1) scale of environment (see #30, "Appropriately Scaled Space")
2) safe, child-proof spaces and fixtures
3) specialized space (e.g. large motor skills rooms, infant rooms)
4) space and features for early childhood special education
5) outdoor play and learning space
6) Appropriate size furniture for adults and families.

10. Places for the Individual

Design facilities that support efforts to personalize learning for all students. Recognize learner needs for places that allow them to take initiative and explore their interests, and for a place they can make their own. Consider a range of functions and types - perhaps not all at every location:

1) adaptable display space celebrating student work
2) youth lounge/commons
3) individual workspace
4) lockers/cubbies/storage for individuals: 'home base'

11. Space for Enriching Activities

Because participation in co-curricular activities enhances the personal development of the participants, modern facilities with adequate space will be provided to support these activities. Activities include Athletics,

Performing and Visual Arts, and Student Activities such as publications and clubs. Facilities for activities should include:

1) Athletics:
    a) adequate number of gymnasiums to support school and community activities
    b) bright, spacious strength training facilities for use by all sports and physical education classes
    c) proper indoor lighting and ventilation in athletic areas
    d) adequate storage space
    e) adequate showering facilities
    f) area for loading
2) Performing and Visual Arts:
    a) adequate storage and preparation space
    b) areas for changing and loading
    c) rehearsal space
    d) display space
    e) specialized acoustics, lighting, electrical and sound systems
    f) access to performing space
    g) Instrument storage sharing lockers between athletics, music and others
3) Student Activities:
    a) production space
    b) display space
    c) meeting space
    d) adequate storage space
4) Booster Clubs:
    a) meeting space
    b) storage space

12. Staff Resource and Collaboration Space

Provide staff space that will encourage collaboration, support interdisciplinary teaching and teaming and reduce staff isolation. Adequate and functional space for teachers to meet, plan and work are essential to successful educational service. Locate work/planning spaces to allow natural connections between students and staff. Characteristics include:

1) individual work space
2) planning/meeting space
3) access to storage space for curriculum materials, student portfolios, records, etc.
4) provisions for staff phones and computers
5) visual connections to students
6) casual interaction/eating space (Lounges) incorporated into spaces.

13. Adult Learning Space

Provide space to allow for education of adults; both employees of the district and community members. Spaces should support staff development, Professional Learning Community (PLC) activities and learning. Characteristics include:

1) appropriately scaled furnishings
2) flexible, adaptable, technology-rich space
3) connected for distance learning

14. Daylighting and Views (Safety is a concern with all the light)

Rooms that house people should have windows for connection to the outside and for natural light. Designs must consider security and control of light, glare and heat gain/loss. Incorporate windows to other spaces for distribution of light and visual connections. Benefits include:

1) natural, adequate daylight improves learning and greatly enhances the comfort and utility of learning environments
2) views for supervision/security - 'eyes on the site'
3) support curriculum, e.g. seeing weather
4) reduced electricity through daylight harvesting
5) establish cleaning schedule to windows/lights, to increase light and reduce energy loads

15. Accessible Buildings

Each facility should apply the concepts of Universal Design as well as meeting ADA requirements, to make accessible features useful for all. Modify existing buildings to remove barriers to public spaces and provide convenient access to all levels as a first priority. Address:

1) school entries and public routes
2) stages
3) counters, cabinets, furniture
4) toilet facilities (fixtures, door openings)
5) Classroom space
6) Square Footage per student

16. Community Service Centers

Facilities will be designed to allow cooperation with local organizations and government agencies, along with the District, to provide important services for students and the community. Programs may include community education, adult education, health services, English Language Learning (ELL), alternative programs, parenting classes, extended day/ summer programs and school-age childcare options. Some guidelines:

1) space should consist of flexible/multiple use classrooms, conference rooms and offices
2) facilities should enhance opportunities for all community programs
3) security and control systems are in place to monitor use
4) locate near entry and parking
5) secure and adequate storage for multiple users

17. Safety

Design schools to provide a safe and secure environment. Students, staff, visitors and the community should be able to regard the school as a safe haven in which to meet, learn and work. Include:

1) passive security through design – sight lines, open, well lit spaces
2) visible, monitored secured entry points to facility
3) electronic monitoring, remote cameras
4) regulated entry point(s) after hours
5) design solutions sensitive to community aesthetics

18. Clear Main Entry

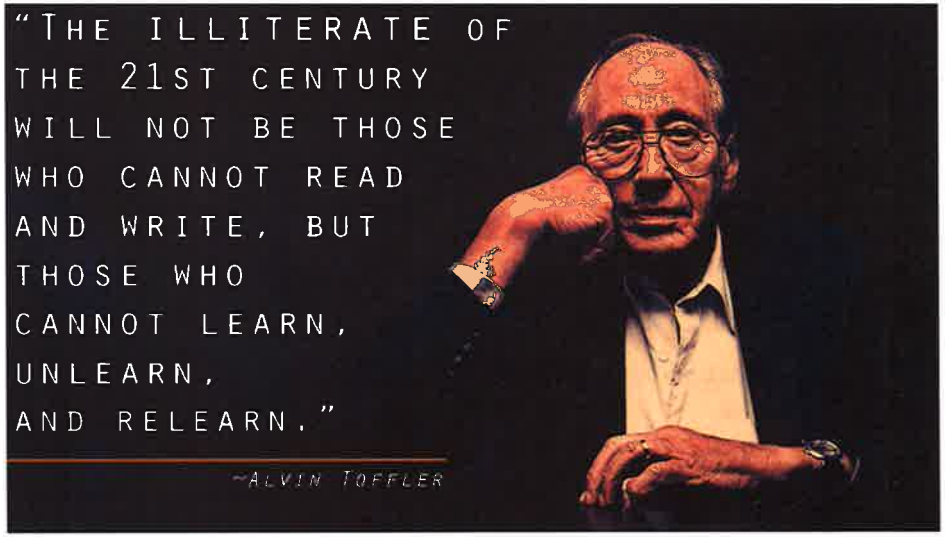
Create a clear, identifiable main entry with direct access to the main office. Consider the concept of a "welcome center" to orient visitors and control access. Contributing elements:

1) parking lot location/circulation to reinforce main building entry
2) signage, flag poles and landscaping
3) increased scale of entry elements
4) Entry space for wind, rain and sun protection
5) if buses bring students to a second entry, it should have comparable quality

19. Welcoming and Respectful Main Office

The administration and reception functions of each school will be housed in pleasant, comfortable spaces to welcome visitors and the public, as well as the school's students and staff. Design to accommodate:

1) adequate space to welcome and support guests, parents, volunteers and students
2) separate space for discipline sessions and student waiting
3) adequate space for front-end administration staff and leadership
4) adjacency to health/nurse/guidance
5) adjacency to staff/work/lounge/mail
6) acoustical levels appropriate for office environment
7) locate computer screens for privacy
8) access to adequate storage



20. Health Services Space

Health Services within the schools address basic needs for physical health through direct and educational/ preventative services. Include:

1) location convenient to main office and vehicle approach
2) space for on-site and itinerant staff
3) conference room (access) for educational efforts
4) privacy and security yet easy supervision
5) finishes to address sanitation issues
6) proper labeling of nurse's office for non-students to locate in building

21. Facilities for Media Centers

The media center mission is to ensure that all students and staff are effective users of information. Design media space to support learning and instruction for students and staff in informational literacy and information technology skills. Provide:

1) adequate size/space to meet or exceed state guidelines
2) flexible, moveable furniture and space for media collections
3) space for display
4) flexible design to accommodate multiple uses
5) variety of spaces for collaborative learning and instruction as well as for materials and individuals
6) adequate storage for equipment and materials
7) adequate ventilation and air quality for computer-heavy areas
8) acoustical treatments that support many activities while minimizing noise

22. Food Service

Food Service areas will include space for efficient production and serving of nutritious, healthy food. Accommodate the shift to greater preparation from fresh ingredients to support the focus on health and wellness. In addition, they should be designed to be appealing to students and others in the buildings. Design for:

1) pleasant, welcoming dining areas with variety of furniture, layout and finishes
2) adequate size/capacity of dining and servery to serve students within a respectful time
3) extended dining areas where appropriate, including outdoors
4) flexibility for other uses outside of dining hours
5) serving areas offering choices, such as salad bars
6) facilities to support preparation and serving for diverse dietary needs
7) ease of maintenance
8) reducing waste through composting, etc.
9) opportunities for expanded services and/or student involvement: catering, coffee shop, school store, and private sector collaborations
10) acoustical treatments

23. Technology Space

Incorporate space for current and future technology infrastructure and equipment into the design of buildings, with space for student/staff/ community use. Specific examples:

1) dedicated space in classrooms to store student devices
2) labs integrating computers, such as Technology Education shops/ labs
3) technology distributed throughout the building
4) distance learning/interactive video facilities
5) server/hub/wiring rooms (secured and with air conditioning)
6) appropriate and/or flexible network "drop" and/or wireless locations
7) pathways for expansion and change of systems
8) 'juice bars' (to charge batteries while using devices) and services

24. Storage Space

Provide dedicated interior storage space at each school, designed for large and small items. In addition, locate enclosed storage convenient to activity fields and/or paved areas for maintenance and play equipment. Provide:

1) dedicated space versus use of vacant learning spaces
2) dedicated space for equipment and project materials
3) storage within classrooms/labs for student work and projects
4) outdoor and indoor maintenance equipment storage which

recognizes sizes and specific needs of the equipment

25. Plumbing Core
Adequate restrooms, drinking water and custodial closets are critical to a well-run school facility. Restrooms must be in good condition and distributed in locations allowing convenient use. Restrooms meet ADA requirements. Some guidelines include:

1) provide staff/parent/volunteer restrooms
2) custodial closets should be sized properly for equipment and supplies
3) finished with durable/cleanable materials
4) durable construction in all restrooms to deter vandalism, maintain privacy

26. Building and Energy Codes
Construction projects will have to account for current building, fire, accessibility and energy codes. Issues to consider include:

1) access/egress requirements based on size and use of classrooms/ labs/assembly areas
2) building meets or exceeds energy efficiency standards; include renewable energy
3) sustainable design and operations wherever possible

27. Internal Circulation
Spaces for movement between and among learning settings are integral to the learning experience, in support of the learning "anytime, anywhere" philosophy. They must support flow in a respectful and safe manner, while maximizing the opportunities for even corridors to be places of learning and collaboration.

1) wide enough to support the volume of learners moving through
2) include places for informal interactions and learning along the way

3) consider impact of ample locker space (for Minnesota winter coats) and display

28. District Administration
An accessible administrative center will provide environments for administration and central services which support their work and assist in serving the public and the individual schools. Guidelines:

1) proximity to schools and community
2) staff development and meeting space
3) quality work environments for services
4) ample space for community in Board meeting area

INTERIORS AND FINISHES

29. Flexible/Adaptable Space
Design learning environments to address short and longer term modifications in response to educational program – hourly/daily and longer term/yearly changes in use. Chacteristics:

1) easily moveable/reconfigurable furniture
2) multiple marker boards/screens and power for different room layouts
3) Use of movable or relocatable shelving and standard cabinets. Use of shared cabinets, less casework in classrooms/instructional spaces to support marker boards and screens.
4) provisions for openings/doors between rooms
5) consider plumbing rough-ins
6) pathway systems for power and technology cabling
7) Wall construction that supports change, but is appropriate to function/ characteristics required

30. Appropriately-Scaled Space
Building design must be appropriate to the student age/size. Schools will recognize and respect their learners' physical, intellectual and emotional characteristics. Characteristics:

1) appropriate mounting heights for counters, boards, dispensers (soap, paper towel, etc.) and toilets with adjustable mounting heights
2) equipment and furniture scaled for the age level
3) equipment and furniture which allow height adjustment
4) properly scaled spaces, considering ceiling height, acoustics and other factors
5) consider adult user needs
6) layout of building or footprint appropriate for age level

31. Signage and Display
Provide multiple opportunities for display of information and 2 & 3 dimensional student work. Design directional signage for the school that clearly identifies school spaces and organization. Use opportunities offered by directional signage to add to facility identity; displays can "advertise" the school and events. Reflect diversity of community. Provide space and fixtures for:

1) school name and district identity visible from the street
2) clear way finding system – useable also by non-English speaking citizens
3) map of facility, permanently mounted near main entry and other key areas in school
4) use of logos, symbols, color, quotations to inspire
5) advertising for community and school events

32. Experiential Interiors
Recognizing that learning facilities can be the "Third Teacher," use materials, light, color and forms to create lively interior spaces. Experiential learning can include use of the building as a resource and tool to be observed and studied. Experiential characteristics include:

1) views of the movement of sunlight and shadow
2) lighting to simulate daylight, where daylight is not possible
3) colorful – stimulating/calming, supportive of special needs students
4) textures
5) natural materials

6) form/shape

33. Furniture and Finishes for Learning
Select colors, interior finishes and furniture which contribute to the quality of the learning environment and are appropriate to the use of the space. Give attention to:

1) research on human response to colors
2) cleanable floor coverings in project spaces
3) acoustical properties of materials such as carpet or ceiling tile
4) up-to-date furniture that is ergonomically designed, age and use-appropriate, and easily moved/reconfigured
5) furniture that is adaptable for multiple uses and locations

SYSTEMS

34. Quality HVAC/Plumbing
Heating, ventilating, air conditioning and plumbing systems must be designed to support student learning and the health and comfort of school users. Upgrade/create energy efficient, dependable HVAC systems that allow some control by the users of any given space:

1) consider reclaiming grey water for safe reuse
2) select and design mechanical systems and materials for efficiency and good indoor air quality
3) design upgraded plumbing to be accessible, water efficient and effective
4) study and employ alternative and renewable energy systems as appropriate and fiscally responsible

35. Ample Electrical Service Systems and Lighting
Power capabilities of all schools will include sufficient, distributed electrical outlets and clean power to support anytime anywhere learning. Lighting will provide multiple light levels for efficiency and function Recommendations:

1) consider special events needs
2) utilize floor outlets, including data wiring, in selected areas for flexibility
3) adequate individual access to power (for devices, e.g. Juice bars)
4) address special battery charging/electrical needs for custodial equipment
5) study and employ alternative energy systems as appropriate and fiscally responsible

36. Technology Infrastructure and Hardware
Technology systems are a key tool for learning and in communications among staff, administration, students and parents. Technology system/network access in the school will be distributed throughout the schools and allow for expansion and change. Consider:

1) access anywhere, anytime, by appropriate users
2) flexible design to adapt to rapid technological change
3) distance learning options/software and connections
4) administrative and support software systems
5) security, e.g. video cameras for surveillance/confidentiality and acquiring an entire security facility
6) voice amplification systems in instructional areas considering need for small group sound amplification

37. Technologically Enhanced Systems
Digital controls for ventilation, lighting and power systems allow for central control/monitoring and improved energy efficiency. Consider:

1) building automation and energy management plan implemented district-wide
2) utilize light sensors with central/timed switching
3) tied to security systems/plans
4) recognizing outside school use schedule
5) inventory management

SITE

38. Safe and Accessible
The design of surfaces, walks, ramps, plantings and drainage systems for a

site contributed to user well-being. Design a ground plane that assists rain water control, supports maintenance, and applies the concepts of Universal Design as well as meeting ADA requirements. Design guidelines include:

1) apply to all school grounds, including play areas and outdoor learning spaces
2) promote infiltration and recapture of rainwater where possible
3) create accessible topography and design suitable ramps
4) provide quality lighting
5) consider snow management

39. Traffic Control

Reduction of traffic conflicts between buses, cars, bicycles and pedestrians is a critical component of site safety. Locate bus pick-up and drop zones separate from parent pick-up and drop zones, and size the bus area to handle the full number of buses at each school. Define and control pedestrian and bicycle walkways on the site. Design visitor parking areas to coordinate with parent pick-up zones. Operational management is critical: publish and enforce rules for site use.

1) analyze student and adult traffic patterns
2) recognize neighborhood traffic patterns in setting parent drop-off capacity
3) limit bus and parent drop-off to single lane, curb side configuration
4) provide dedicated fire lanes where required
5) provide signage to communicate configurations

40. Parking and Service Access

Design adequate, safe and well-lit car and bike parking for visitors, staff and students. Provide adequate, safe and screened service and delivery areas. Design guidelines include:

1) design visitor parking to direct visitors to main entrances
2) develop relationships with neighboring properties for off-hours event parking
3) landscape parking lots to reduce heat island effect and control storm water
4) locate and/or screen service areas so that they are not directly visible from public areas
5) locate bike parking in an area that can be visually supervised

41. Landscape Character

Attractive, developed landscaping adds significantly to character, quality, sustainability and identity of any site and can improve student and community respect for the school. Maintain quality landscape and maintenance program at each facility:

1) promote sound environmental decisions
2) employ appropriate hard surfaces, using a variety of paving materials
3) utilize grass turf where appropriate, with irrigation systems only if needed
4) consider native plant species where possible
5) relate landscaping to outdoor learning setting and curriculum
6) support maintenance program at each facility
7) consider security in selecting and locating mid-height plantings

42. Safe and Accessible Outdoor Play

Physical activity is a key part of a healthy school experience, therefore play grounds, play fields and athletic fields must be available for student use during and after school. Safety, security, accessibility will be considered. Components of safe outdoor play areas include:

1) artificial turf, grass, paving, and other surfaces in good/safe condition
2) safe and accessible equipment that is age appropriate
3) adequate size and number of fields, courts and play areas
4) properly maintained athletic fields and fencing
5) areas for unstructured play
6) defined boundaries and perimeter
7) in plain view of school staff and neighbors
8) provide shading
9) safe and secure lighting of fields and play areas

43. Outdoor Learning Settings

Outdoor environments can add valuable space for learning, and help students make connections between their studies and the physical environment. Each site will strive to have at least three types of outdoor learning settings: gardens, small and large gathering spaces and outdoor "classrooms."

1) nature areas with possible gardens as outdoor labs
2) gathering spaces, informal "stage"
3) amenities to support outdoor learning (e.g. hose bib for watering gardens)

44. Planned Expansion

Plan each school site keeping open possibilities for future expansion and the flexibility to handle changes in the number and characteristic of learners without sacrificing quality of structure or experiences. Design in:

1) hallways/circulation systems that can be extended
2) core facilities arranged to grow as classrooms are added
3) site layouts to accommodate expansion without loss of critical site features (play areas, P.E./athletic facilities, parking, service areas, specialized learning areas)

45. Permanent Facilities

Protect community's investment in schools by designing buildings for long term use. Use materials, construction methods and details for durability, efficiency, sustainability and institutional quality:

1) consider maintenance/operations cost over time as well as initial construction costs
2) consider potential future conversion to other uses
3) limit use of portables to short-term needs (1-5 years)

COMMUNITY / OFF-SITE

46. Community/Off-Site Learning Settings

Explore opportunities with the community for off-site learning settings to

augment the curriculum and school facilities. Recognize that community connections are a resource for students, staff and the broader community. Design school for connections to significant local resources, such as government, businesses, arts institutions, higher education. Efforts may include:

1) create space for partners (businesses, community members, groups) on campuses, such as work/office/ seminar space and kiosks/ displays
2) link science labs to outdoor learning settings on-site or in neighborhood
3) create partnerships for off-site use of highly specialized space, such as bio-tech labs or TV studios
4) create/expand partnerships with other educational institutions

47. Joint-Use Facilities

Explore the possibility at each site of creating facilities that will be jointly used, operated and funded by the School District and another organization (e.g. City, YMCA, areas of worship). Develop a management plan to establish mutually beneficial design and operation terms that include safety, security, access, parking and liability issues as well as concerns of partners. Benefits go beyond financial support for additional facilities to increased community participation in schools. Possible shared areas could include:

1) meeting/conference facilities
2) gymnasiums
3) performing arts space
4) fitness rooms
5) multi-purpose spaces
6) video and media facilities
7) swimming pools
8) playgrounds/athletic fields/facilities/
9) lunchroom/community kitchen
10) environmental/nature settings
11) child care
12) branch banks, Minute Clinic, dental, Lifetime Fitness, etc.

48. Connections between School Sites

Establish connections which foster equitable programs and communications between sites. Consider:

1) electronic linkages, e.g. Skype/video conferencing
2) central storage/services with inventory systems
3) shared programs at different grade levels
4) transportation for adults and children between sites

49. Transportation

Provide vehicles and facilities to support energy efficient, low-emissions transportation of students to/from school and on trips, and for support functions.

1) alternative fuel buses and service vehicles
2) electric vehicles
3) charging stations

RELAX AND ALLOW. CONSTANT SELF MONITORING WILL GET IN THE WAY OF GROUP PERFORMANCE. LET GO... **DON'T WORRY ABOUT WHO GETS CREDIT.** WHEN EVERYONE GENUINELY COLLABORATES, EVERYONE ENDS UP BEING MORE CREATIVE. (SEEK THE COMMON GROUND). **CLARITY IS NOT A VIRTUE.** IF EVERYTHING YOU SAY IS DETAILED AND EXPLICIT, YOU WON'T GIVE YOUR COLLABORATORS ROOM TO RUN. PUT IDEAS OUT THERE THAT ARE HALF-BAKED. **CREATIVITY IS RISKY.** PUT YOURSELF IN AN ENVIRONMENT THAT REWARDS FAILURE. SUCCESSFUL CREATIVE TEAMS ARE ALSO THE ONES WHO FAIL THE MOST OFTEN.

WORKSHOP 2 – DAY 2
OCTOBER 8, 2014

PURPOSE

To review the Facility Standards; and to begin to create a Conceptual Framework.

RECAP AND REFLECTIONS ON FIRST DAY OF WORKSHOP TWO

Participants were asked to take a moment to reflect on the activities of the previous day, questions and thoughts on the workshop, the Facility Standards and the Past and Parrallel Studies Presentation.

PROVOCATIONS AND REFLECTIONS

A provocation was shared to help participants visualize the direction education is moving in regards to customized and personalized learning and how it factors in supporting their vision for the future of Moorhead Area Public Schools.

CREATING A CONCEPTUAL FRAMEWORK

In a two-step exercise (idea generation and reporting out), participants were divided up in small groups and asked to consider the Vision Statement, Facility Principles and Standards and the results of all the provocations and exercises and describe 3 dimensionally (with colored blocks) their ideal learning environment. Each group then reported to the entire group.

PROCESS

Defining Facility Aspirations and Priorities - Workshop 2 - Day 2

CREATING A CONCEPTUAL FRAMEWORK

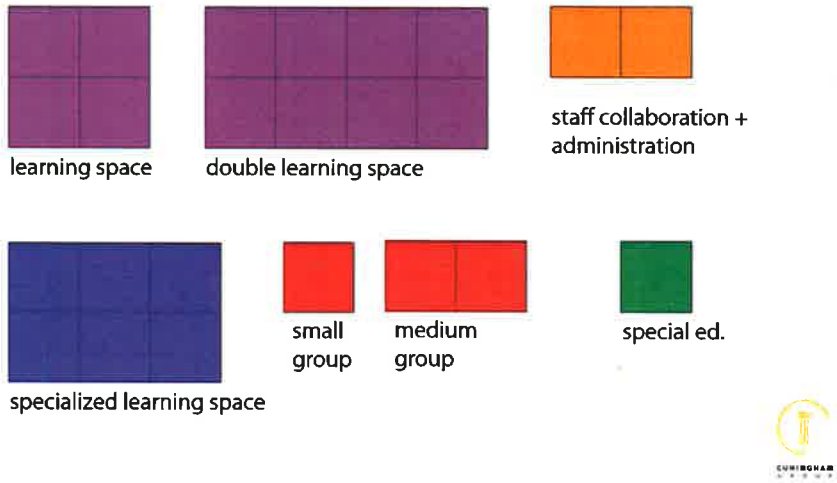
The groups were broken up into 4 teams; each team was requested to select one of a group of different educational level facility types: PK-5, 6-8, 9-12 and STEAM. With consideration of the Vision, Principles and Standards, they described three dimensionally their ideal learning environment. Each member of the table took on a different role (teacher, parent, student, administrator, community member, etc.) and explained why the design worked from that perspective.

Each group was provided with a design kit which included blocks, pipe cleaners, string, scissors, tape, markers, Styrofoam, popsicle sticks, etc. Designs were for a whole building or a part of a building. The exercise would serve as a way to generate ideas and to get people thinking about their vision for their ideal spaces.

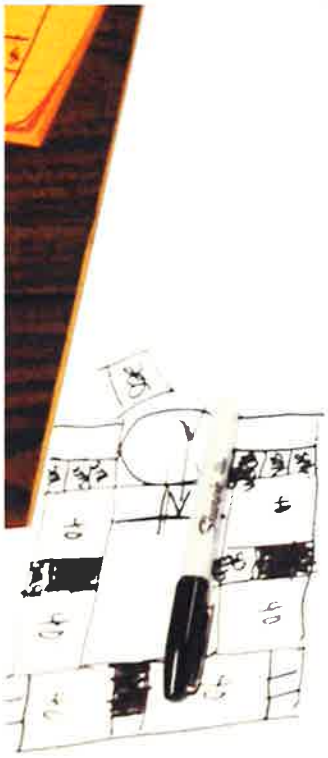
After the exercise each group presented to the entire Task Force; each member reprised their role as parent, teacher, student and administrator and identified items in the design that they appreciated, needed, wanted or worked well.

The exercise was subsequently reveiewed and discussed with the entire Task Force, the following is a record of the recap.

KEY



GRADES PK - 5



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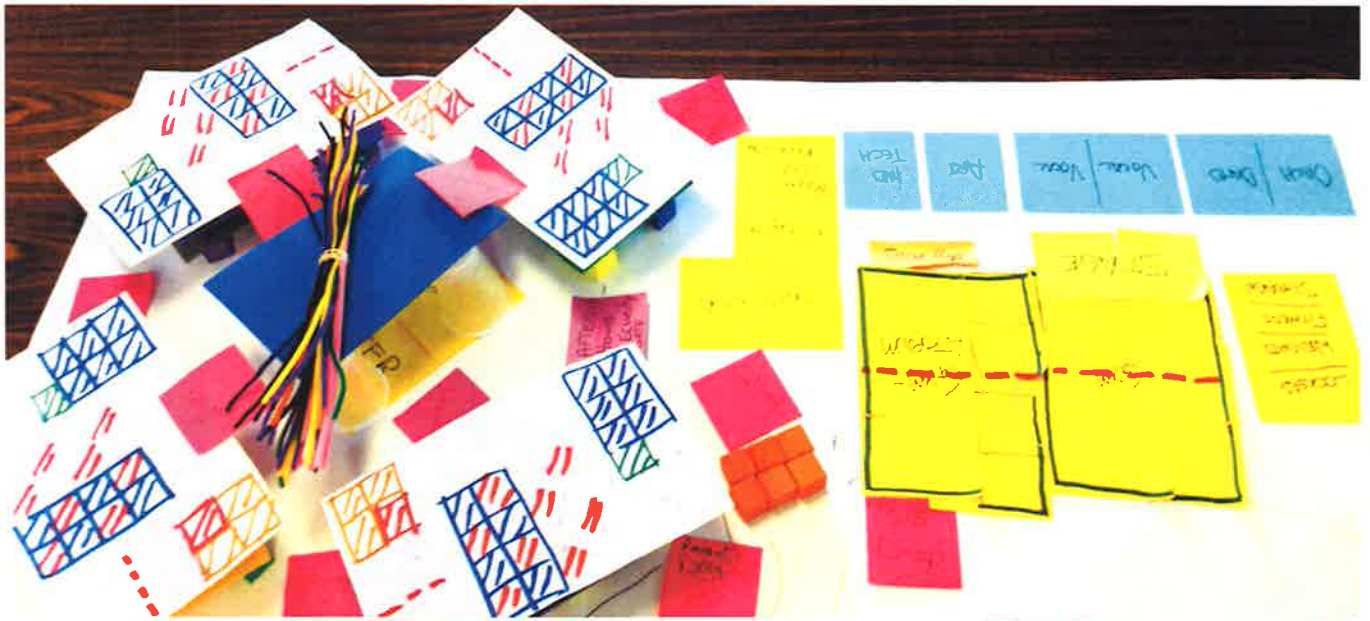
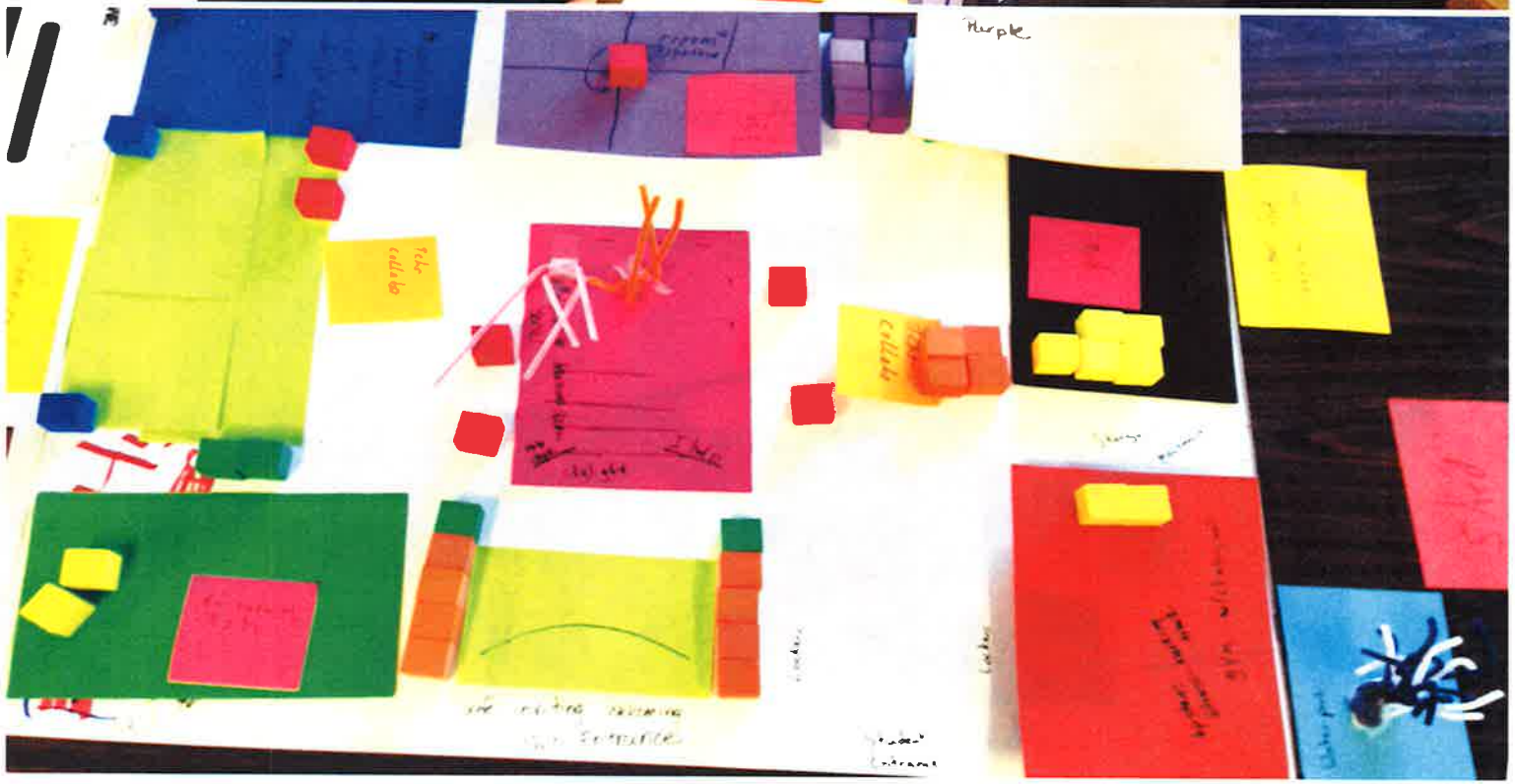


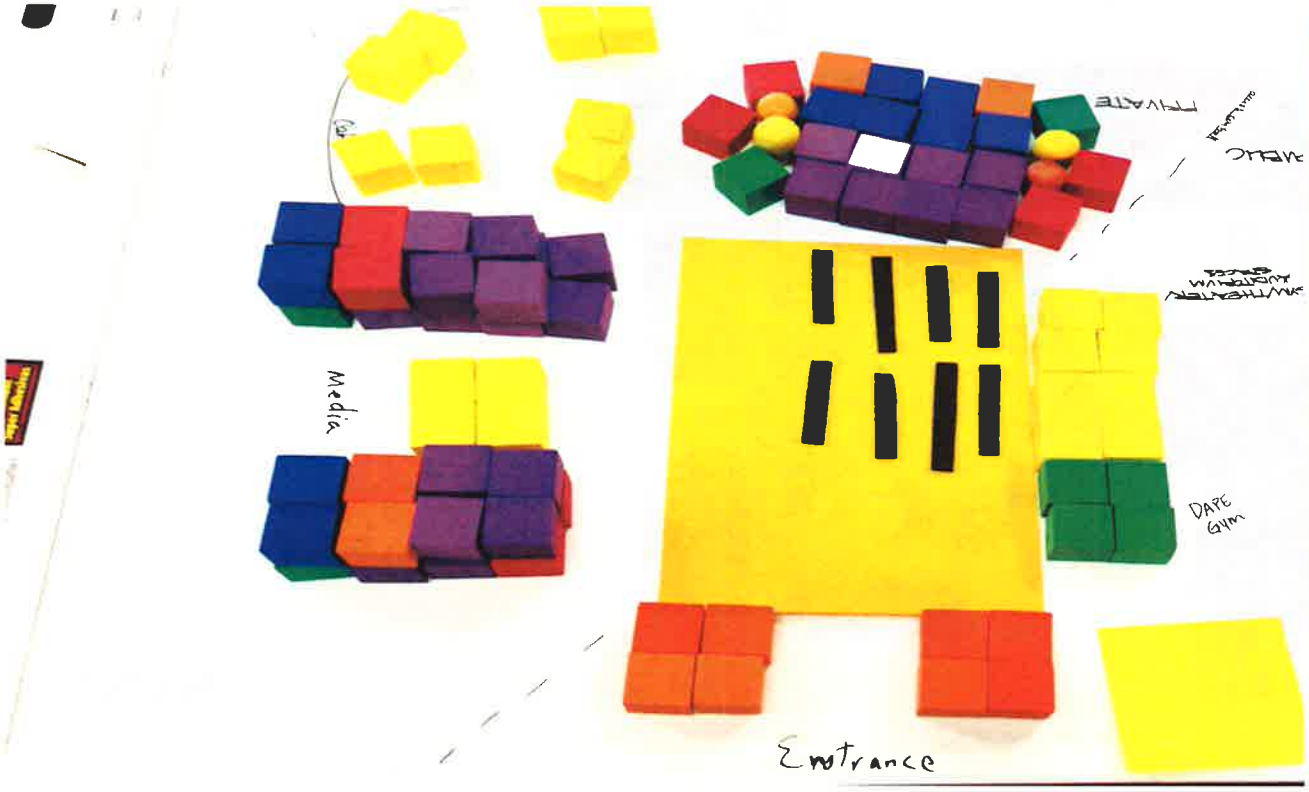
STEAM



PROCESS

Defining Facility Aspirations and Priorities - Workshop 2 - Day 2

GRADES 9 - 12



I. Access Control entrance
A. Main office (controlled entrance)
1. school day
2. community events
3. welcoming space

B. Open space (center)
flow of building
1. flex furniture
2. lockers centered
3. ability to access all other spa
4. safety/access hard wall.

C. Learning Spaces (Academic Area)
each learning area could be departments or academies or grade configuration
1. traditional spaces (shared varie
2. specialized learning spaces -
3. small group (PBL/ breakout
4. special Ed in all learning areas
5. staff spaces
6. proper storage
7.

D. Can this model be expanded to support equally

E. Community Spaces
1. available 24/7 easily?
2.
3.
4.

RECAP AND REFLECTION: CONCEPTUAL FRAMEWORK

After the Conceptual framework exercise the Task Force members presented each of the different group solutions, talked about strengths, concerns, items of note, design process and basic concepts. After all the groups had presented a general dialogue was facilitated, with common themes identified as follows:

COMMON THEMES:

- Community Friendly
- Light
- Secure
- Inviting
- Active
- Sharing
- Flexible
- Student friendly
- Linking to specific space for Community Partnerships to attract more of the Community
- Reference models in North Dakota
- All Ages
- YMCA/City/District
- Team with Businesses
- Sprinkling of Activities
- Display
- Flow
- Cost Effective
- Intergenerational
- Community Spaces
- Innovative
- Common Areas
- Different levels of Community at different scales

AHA MOMENTS:

- Locker Placement
- Magnet/Art School to attract families
- Evolution from textbooks to technology
- Connection between indoor/outdoor performance
- Integration of Social Spaces
- "Starbucks" type spaces
- Outdoor spaces conducive to learning

WORKSHOP 3 – DAY 1
NOVEMBER 3, 2014

PURPOSE

To identify the gaps between "What currently exists" and "What we want" this would essentially help define the biggest facility challenges the Task Force would have to address for the 10-year Master Plan.

ALEXANDRIA HIGH SCHOOL TOUR

Members of the Task Force gathered to meet at the new Alexandria High School, to take a tour guided by Alexandria ISD Superintendant Terry Quist and Alexandria High School Principal Chad Duwenhoegger.

INTRODUCTION TO THE GAP ANALYSIS

Prior to the onset of Workshop 3 the District distributed the Gap Analysis form to the Principals, Directors and Managers of all their facilities and requested that they have their staff provide an assessment of their respective facilities.

ALEXANDRIA HIGH SCHOOL TOUR

Members of the Task Force gathered to meet at the new Alexandria High School, to take a tour of Alexandria's premiere educational facility. The tour focused on 21st Century Learning Practices; community partnerships; flexible spaces and furniture; adopted learning practices, educational programs served; preparation for tertiary education; environments that foster and enable learning and preparation for the future. After the tour the group assembled to reflect and recap the tour, the contents of that exercise is as follows:

- Wow
- Feeling of openness
- Flexibility
- Community Partnerships Oozed
- Utilization of Technology
- Personalization
- Variety of different size group gatherings
- Calm-Quiet
- Active building innovation space was front and center
- Counter top in Media Center is inadequate for laptop returns
- No lecturing, working independently in small groups
- Very inviting common area with 4 variety of surfaces
- Food opportunities (Variety)
- Push the edge and commit
- Engaged
- Secure entry – still welcoming
- Independence/choice permeated
- Gymnasiums
- Interactive Board in Athletics: History/trophies/academics
- Auditorium
- Maintenance of floors in serving is difficult – grout
- Design options are valuable
- Electronic/Technology

INTRODUCTION TO THE GAP ANALYSIS

The Gap Analysis form is a document developed from the Facility Standards that was refined by the task force in Workshop 2. The Facility Standards served as a guideline for essentially measuring the myriad of components within each Moorhead Public School facility that allowed the group to define a baseline standard for priorities and values in the form of the Gap Analysis form.

Prior to the onset of Workshop 3 the District distributed the Gap Analysis form to the Principals, Directors and Managers of all their facilities and requested that they have their staff provide an assessment of their respective facilities based on the criteria set in the facility standards developed in Workshop 2 and average out the final scores. In that time members of the task force had also been taken on a tour of all the facilities owned, leased and managed by the district. After the tour of Alexandria High School the task force was introduced to the collated Gap Analysis form for the district's facilities and requested to reflect on their tour of District Facilities. Their thoughts and questions were recorded and are as follows:

REFLECTIONS ON CURRENT DISTRICT FACILITIES:

Robert Asp/Ellen Hopkins:

- Storage
- Classrooms
- Support (Tech resource rooms)
- Move students to new school
- Safety – entrance
- Restrooms
- Cooling – not balanced
- Hopkins parking (in/out)
- Lack of Flex (Furniture)

Moorhead High School:

- Safety/Welcoming, clear main entry (includes parking lot)
- Student gathering
- Flexible learning spaces with variety of furnishings
- Natural light
- Boiler
- Dated building appearance (interior, exterior, landscaping/signs)
- Inconsistent staff resource/collaboration space
- Food service
- Reduce space used in Sports Center

S.G. Reinertsen:

- Storage Space
- Overcrowded – used gathering space for classrooms
- Traffic Area

Horizon:

- Need adequate commons area
- Furnishings – variety in common areas and learning spaces
- Performance area
- HVAC – air-handling
- Outdoor learning (?)

PROCESS

Conceptualization: District Wide / Site Specific - Workshop 3 - Day 1

Red River Area Learning Center:

- Priorities to address
- Lack space for front entrance
- Lack gathering space
- Flexible learning spaces
- Adequate sized learning spaces
- Gym

Probstfield:

- Priorities to address
- Varied spaces for different teaching and learning needs
- Spaces for young learners and parents – need gathering spaces
- Collaborative spaces
- Safety – clear main entry; long way to office
- Accessible outdoor play
- Positives: larger classrooms with bathrooms; green space

WORKSHOP 3 – DAY 2
NOVEMBER 4, 2014

PURPOSE

The primary purpose of this Workshop was to develop District-Wide Scenarios that are a direct result of the groundwork laid to date.

GAP ANALYSIS

Participants were broken up into groups and provided with the weighted Gap Analysis Form populated by staff members of the facilities and asked to adjust the values of the form based on their tour of the facility and the results thus far of the Facilities Master Plan Workshops.

RECAP AND REFLECTIONS

Participants were asked to take a moment to reflect on all activities, results, goals, values and desires established by the Master Planning workshop process thus far.

PROVOCATIONS AND REFLECTIONS

A provocation was shared to help participants step out of their comfort zones and work as a team in tandem with a directly related group activity; the primary purpose of the provocation would be an exercise in how to work better as a group.

DESIGNING A DISTRICT

Participants were broken up into groups to perform work to explore and test scenarios that respond to the Vision, Principles, Standards & Gap Analysis Priorities.

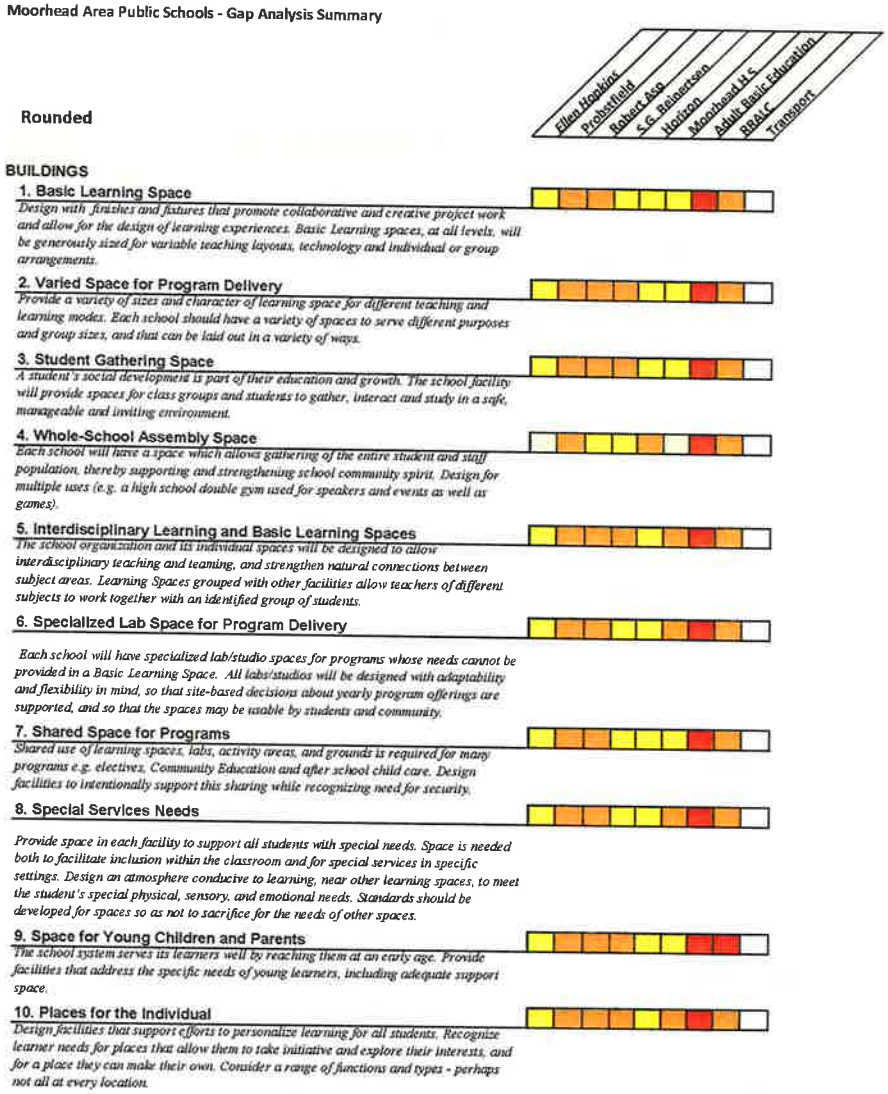
PARAMETERS:

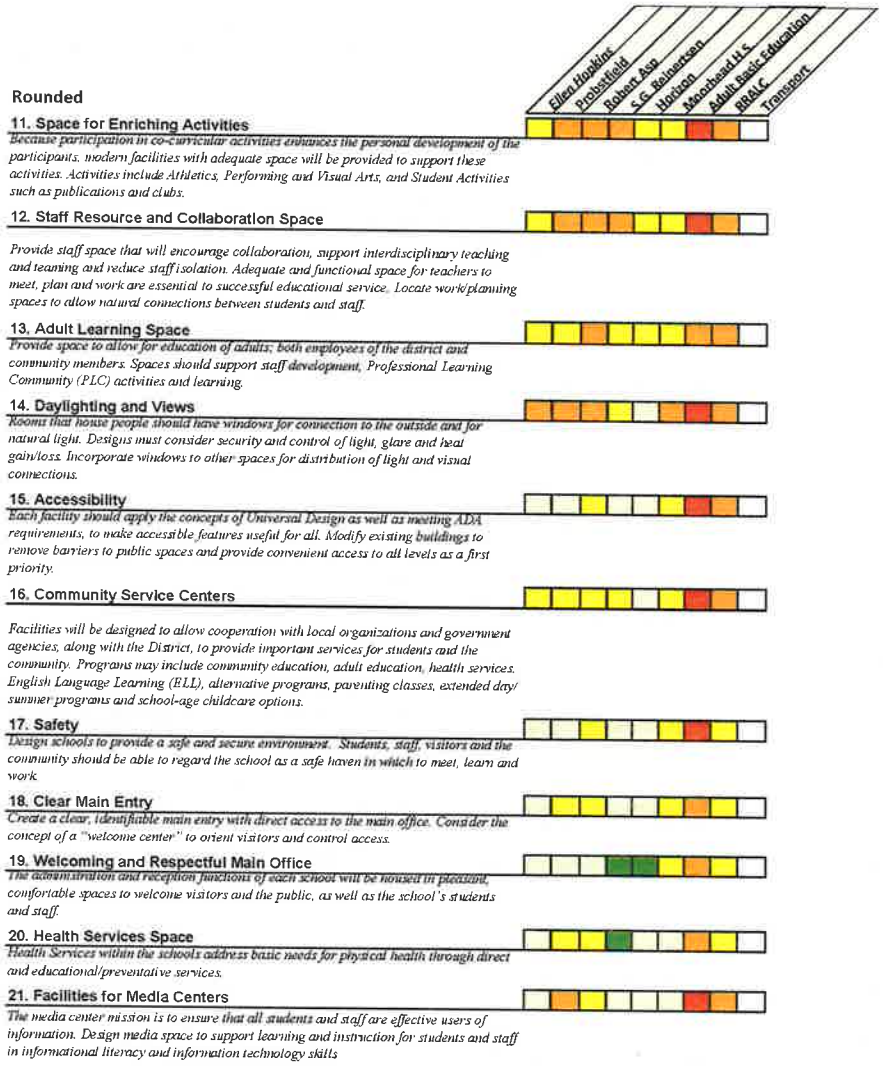
Prior to the Workshop with the Facilities Master Plan Task Force, Cuningham Group Architecture Inc. met with a Steering Committee comprising of Central Office Team Members, and school board and principal representatives to review the process so far and to set guidelines in the form of parameters. They are as follows:

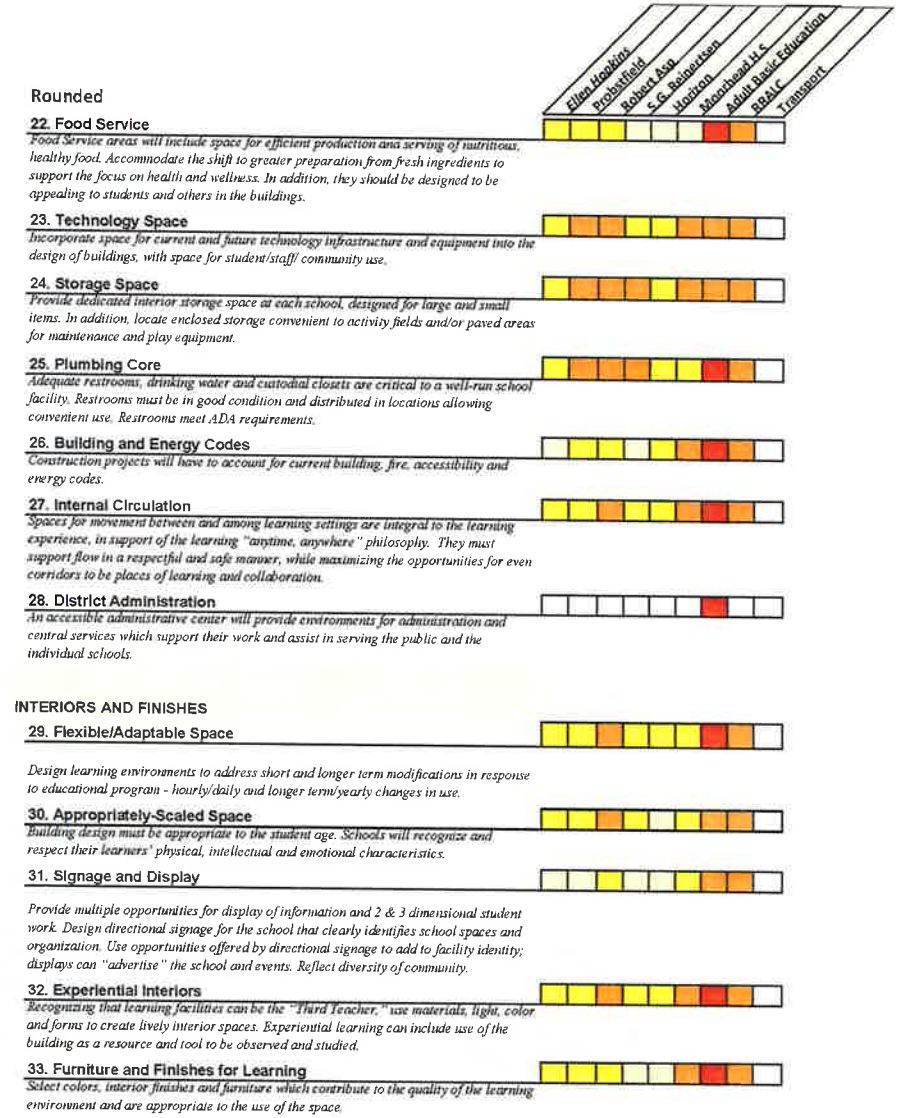
- Value past community efforts
- Minimize transitions
- Eliminate leased space
- Prefer single High School
- Avoid locating school near industrial area
- Prefer locating kindergarten at elementary schools
- Strive for equity across elementary schools
- Limit transportation time to elementary schools: size, program and amenities are key factors
- Centrally locate Middle School and High School
- Plan for 600 students per grade
- Target elementary enrollment to under 750
- Consider locating ABE, RRALC and Community Education on one site
- Address growth in Early Learning and Early Intervention

GAP ANALYSIS

The Facility Master Plan Task Force members, who had in the week prior to the Workshop participated in tours of the District Facilities, were provided the weighted Gap Analysis completed by District Staff. The Task Force was broken into groups, each with one or two different District Facilities and provided with floor plans and the weighted Gap Analysis populated by staff members of the facilities and asked to adjust the values of the form based on their tour of the facility criteria determined primarily by the Facility Standards and guided by the 21st Century Learning goals and aspirations, shared vision and facility principles. Following is the adjusted Gap Analysis.




Rounded
Ellen Hopkins
Probstfield
Robert Asp
S.G. Reinertsen
Horizon
Moorhead H.S.
Adult Basic Education
SRAIC
Transport
11. Space for Enriching Activities
Because participation in co-curricular activities enhances the personal development of the participants, modern facilities with adequate space will be provided to support these activities. Activities include Athletics, Performing and Visual Arts, and Student Activities such as publications and clubs.
12. Staff Resource and Collaboration Space
Provide staff space that will encourage collaboration, support interdisciplinary teaching and teaming and reduce staff isolation. Adequate and functional space for teachers to meet, plan and work are essential to successful educational service. Locate work/planning spaces to allow natural connections between students and staff.
13. Adult Learning Space
Provide space to allow for education of adults; both employees of the district and community members. Spaces should support staff development, Professional Learning Community (PLC) activities and learning.
14. Daylighting and Views
Rooms that house people should have windows for connection to the outside and for natural light. Designs must consider security and control of light, glare and heat gain/loss. Incorporate windows to other spaces for distribution of light and visual connections.
15. Accessibility
Each facility should apply the concepts of Universal Design as well as meeting ADA requirements, to make accessible features useful for all. Modify existing buildings to remove barriers to public spaces and provide convenient access to all levels as a first priority.
16. Community Service Centers
Facilities will be designed to allow cooperation with local organizations and government agencies, along with the District, to provide important services for students and the community. Programs may include community education, adult education, health services, English Language Learning (ELL), alternative programs, parenting classes, extended day/summer programs and school-age childcare options.
17. Safety
Design schools to provide a safe and secure environment. Students, staff, visitors and the community should be able to regard the school as a safe haven in which to meet, learn and work.
18. Clear Main Entry
Create a clear, identifiable main entry with direct access to the main office. Consider the concept of a "welcome center" to orient visitors and control access.
19. Welcoming and Respectful Main Office
The administration and reception functions of each school will be housed in pleasant, comfortable spaces to welcome visitors and the public, as well as the school's students and staff.
20. Health Services Space
Health Services within the schools address basic needs for physical health through direct and educational/preventative services.
21. Facilities for Media Centers
The media center mission is to ensure that all students and staff are effective users of information. Design media space to support learning and instruction for students and staff in informational literacy and information technology skills


Rounded
Ellen Hopkins
Probstfield
Robert Asp
S.G. Reinertsen
Horizon
Moorhead H.S.
Adult Basic Education
SRAIC
Transport
22. Food Service
Food Service areas will include space for efficient production and serving of nutritious, healthy food. Accommodate the shift to greater preparation from fresh ingredients to support the focus on health and wellness. In addition, they should be designed to be appealing to students and others in the buildings.
23. Technology Space
Incorporate space for current and future technology infrastructure and equipment into the design of buildings, with space for student/staff/ community use.
24. Storage Space
Provide dedicated interior storage space at each school, designed for large and small items. In addition, locate enclosed storage convenient to activity fields and/or paved areas for maintenance and play equipment.
25. Plumbing Core
Adequate restrooms, drinking water and custodial closets are critical to a well-run school facility. Restrooms must be in good condition and distributed in locations allowing convenient use. Restrooms meet ADA requirements.
26. Building and Energy Codes
Construction projects will have to account for current building, fire, accessibility and energy codes.
27. Internal Circulation
Spaces for movement between and among learning settings are integral to the learning experience, in support of the learning "anytime, anywhere" philosophy. They must support flow in a respectful and safe manner, while maximizing the opportunities for even corridors to be places of learning and collaboration.
28. District Administration
An accessible administrative center will provide environments for administration and central services which support their work and assist in serving the public and the individual schools.
INTERIORS AND FINISHES
29. Flexible/Adaptable Space
Design learning environments to address short and longer term modifications in response to educational program - hourly/daily and longer term/yearly changes in use.
30. Appropriately-Scaled Space
Building design must be appropriate to the student age. Schools will recognize and respect their learners' physical, intellectual and emotional characteristics.
31. Signage and Display
Provide multiple opportunities for display of information and 2 & 3 dimensional student work. Design directional signage for the school that clearly identifies school spaces and organization. Use opportunities offered by directional signage to add to facility identity; displays can "advertise" the school and events. Reflect diversity of community.
32. Experiential Interiors
Recognizing that learning facilities can be the "Third Teacher," use materials, light, color and forms to create lively interior spaces. Experiential learning can include use of the building as a resource and tool to be observed and studied.
33. Furniture and Finishes for Learning
Select colors, interior finishes and furniture which contribute to the quality of the learning environment and are appropriate to the use of the space.

PROCESS

Conceptualization: District Wide / Site Specific - Workshop 3 - Day 2

Rounded

Ellen Hopkins | Probstfield | Robert Asp | S.G. Reinertsen | Horizon | Moorhead H.S. | Adult Basic Education | RRALC | Transport

SYSTEMS

34. Quality HVAC/Plumbing

Heating, ventilating, air conditioning and plumbing systems must be designed to support student learning and the health and comfort of school users. Upgrade/create energy efficient, dependable HVAC systems that allow some control by the users of any given space.

35. Ample Electrical Service and Systems

Power capabilities of all schools will include sufficient, distributed electrical outlets and clean power to support anytime anywhere learning.

36. Technology Infrastructure and Hardware

Technology systems are a key tool for learning and in communications among staff, administration, students and parents. Technology system/network accesss in the school will be distributed throughout the schools and allow for expansion and change.

37. Technologically Enhanced Systems

Digital controls for ventilation, lighting and power systems allow for central control/monitoring and improved energy efficiency.

SITE

38. Safe and Accessible Site

The design of surfaces, walks, ramps, plantings and drainage systems for a site contributed to user well-being. Design a ground plane that assists rain water control, supports maintenance, and applies the concepts of Universal Design as well as meeting ADA requirements.

39. Traffic Control

Reduction of traffic conflicts between buses, cars, bicycles and pedestrians is a critical component of site safety. Operational management is critical: publish and enforce rules for safe student drop-off areas. Locate bus pick-up and drop zones separate from parent pick-up and drop zones, and size the bus area to handle the full number of buses at each school. Define and control pedestrian and bicycle walkways on the site. Design visitor parking areas to coordinate with parent pick-up zones.

40. Parking and Service Access

Design adequate, safe and well-lit car and bike parking for visitors, staff and students. Provide adequate, safe and screened service and delivery areas.

41. Landscape Character

Attractive, developed landscaping adds significantly to character, quality, sustainability and identity of any site and can improve student and community respect for the school. Maintain quality landscape and maintenance program at each facility.

42. Safe and Accessible Outdoor Play

Physical activity is a key part of a healthy school experience, therefore play grounds, play fields and athletic fields must be available for student use during and after school. Safety, security, accessibility will be considered.

43. Outdoor Learning Settings

Outdoor environments can add valuable space for learning, and help students make connections between their studies and the physical environment. Each site will strive to have at least three types of outdoor learning settings: gardens, small and large gathering spaces and outdoor "classrooms."

44. Planned Expansion

Plan each school site keeping open possibilities for future expansion and the flexibility to handle changes in the number and characteristic of learners without sacrificing quality of structure or experiences.

45. Permanent Facilities

Protect community's investment in schools by designing buildings for long term use. Use materials, construction methods and details for durability, efficiency, sustainability and institutional quality.

Rounded

Ellen Hopkins | Probstfield | Robert Asp | S.G. Reinertsen | Horizon | Moorhead H.S. | Adult Basic Education | RRALC | Transport

COMMUNITY/OFF-SITE

46. Community/Off-Site Learning Settings

Explore opportunities with the community for off-site learning settings to augment the curriculum and school facilities. Recognize that community connections are a resource for students, staff and the broader community. Design school for connections to significant local resources, such as government, businesses, arts institutions, higher education.

47. Joint-Use Facilities

Explore the possibility at each site of creating facilities that will be jointly used, operated and funded by the School District and another organization (e.g. City, YMCA, areas of worship). Develop a management plan to establish mutually beneficial design and operation terms that include safety, security, access, parking and liability issues as well as concerns of partners. Benefits go beyond financial support for additional facilities to increased community participation in schools.

48. Connections between School Sites

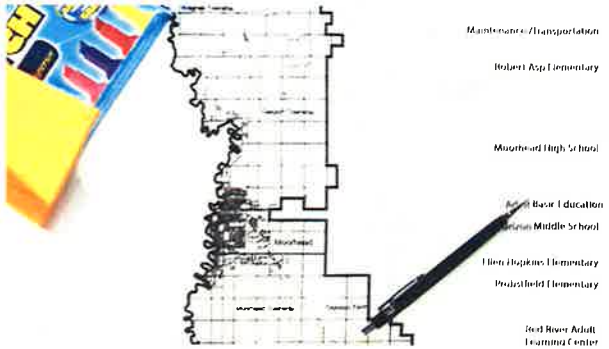
Establish connections which foster equitable programs and communications between sites.

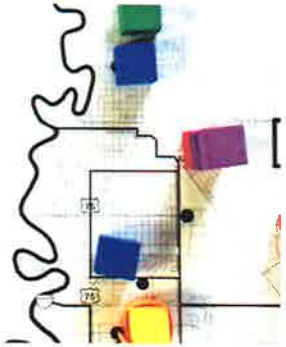
49. Transportation

Provide vehicles and facilities to support energy efficient, low-emissions transportation of students to/from school and on trips, and for support functions.

		Rating Legend
4.5-5	5	Meets Standards
3.5-4.5	4	
2.5-3.49	3	Workable
1.5-2.49	2	
1-1.49	1	Does Not meet Standards

DESIGNING A DISTRICT

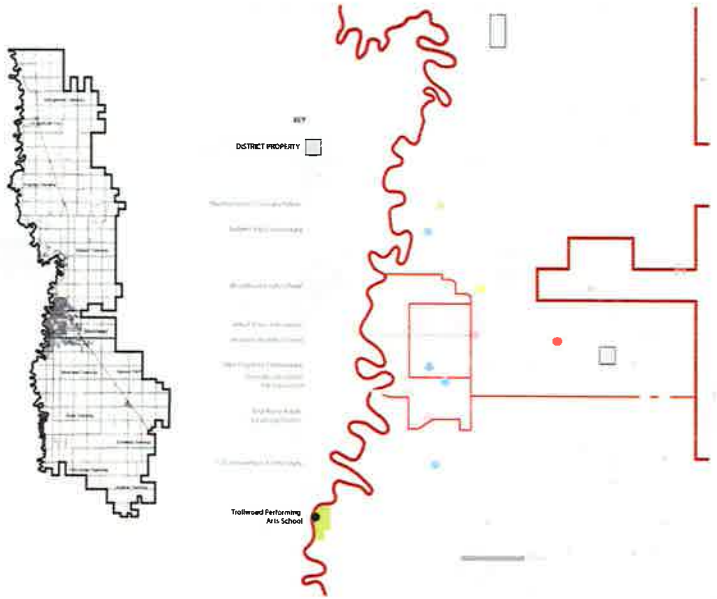




The task force was broken up into teams, and were provided with a District map and colored blocks representing the District's Facilities. Colors were as follows:

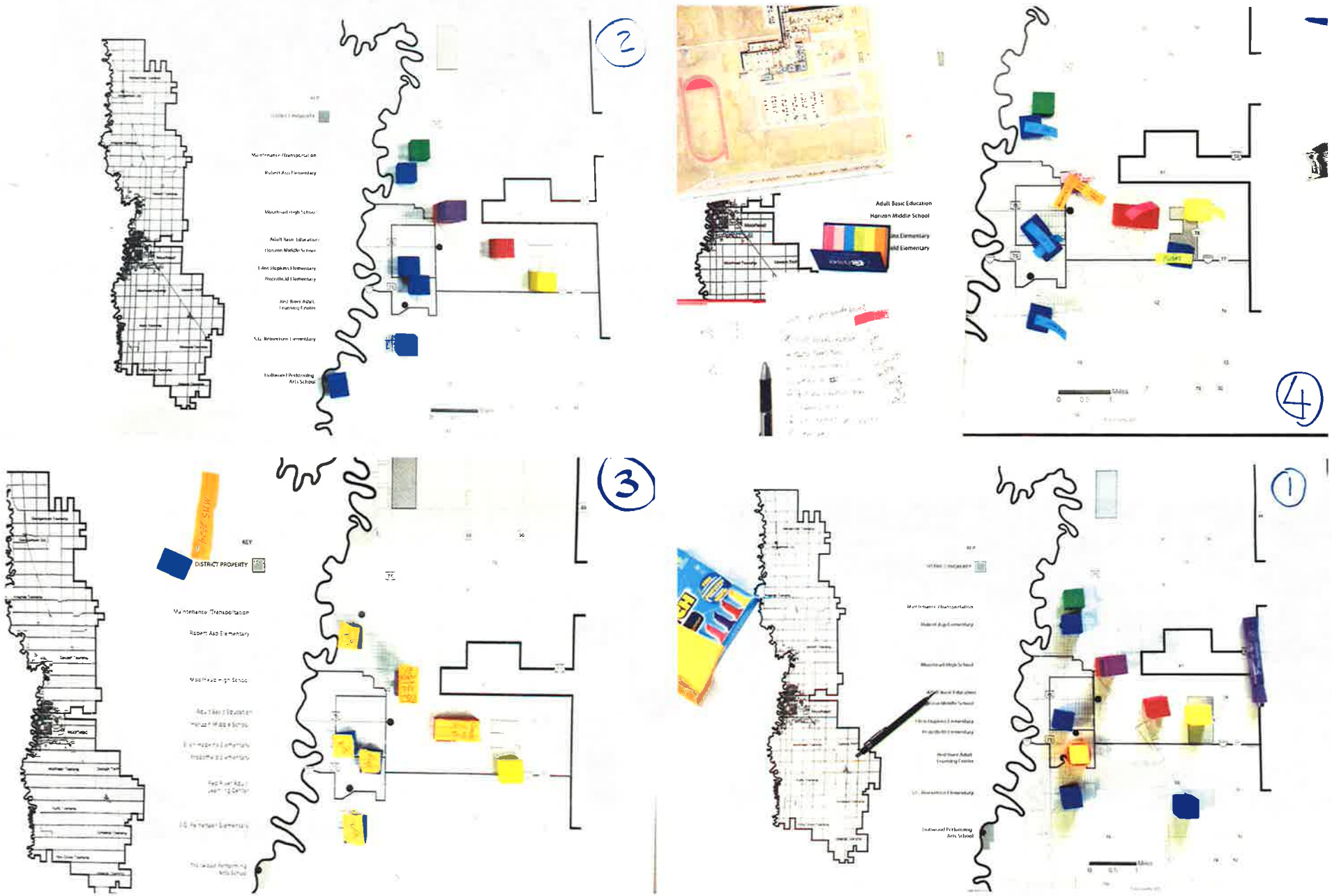
- Elementary schools and Probstfield **BLUE**
- Middle school **RED**
- High school **YELLOW**
- RRALC and ABE **PURPLE**
- Transportation **GREEN**

They were asked to redesign the District taking into consideration the following: the shared Faclity Vision Statement, the District Mission, the Facility Principles and the Gap Analysis priorities. The following images are a result of this exercise.



PROCESS

Conceptualization: District Wide / Site Specific - Workshop 3 - Day 2



WORKSHOP 4 – DAY 1
NOVEMBER 24, 2014

PURPOSE

The primary purpose of this Workshop was to update the Board on the activities of the progress of the Task Force on the Facilities Master Planning Visioning process.

PRESENT SYNTHESIS

A presentation summarizing the results of the work done and activities in the Facilities Master Planning Process thus far was given to the District School Board.

RECAP AND REFLECTIONS

The Board was asked to take a moment to reflect on the synthesis presentation for consideration by the Facilities Master Plan Task Force as they develop their recommendations.

RECAP AND REFLECTIONS

- Access and safety in Elementary Schools
  - Robert Asp
  - Ellen Hopkins
- All-day Kindergarten impacts student population
- Reclaim specialized learning and support spaces
- Solve the enrollment pressure with bigger moves
- Integrate city desires for growth
- Prior conversations with city looked to the school
- Consider Walmart
- Option 'A'
  - No work at Probstfield
  - $ - purchase of RRALC
  - Consider adding gym

WORKSHOP 4 – DAY 2
NOVEMBER 25, 2014

PURPOSE

The primary purpose of this Workshop was to report on the results of the synthesis of the data generated from the facility aspirations and priorities. To provide comprehensive District Wide options to the Task Force.

REVIEW AND RECAP OF BOARD PRESENTATION

The Task Force was asked to review and discuss the reactions to the Board presentation on the previous day. Thoughts and comments were recorded.

SYNTHESIS, PHASING AND COSTING

In this group activity, members of the Task Force were broken into teams and asked to refine the Facilities Master Plan Synthesis previously presented.

REVIEW AND RECAP OF BOARD PRESENTATION

On November 24, 2014, a summary of the results of the Facilities Master Plan visioning process was presented to the Moorhead Area Public School Board as an update. A number of particpants who remained active in the process were present. The following day of the workshop participants were asked to review the response from the Board and general public, the following is a record of the recap:

- Staff looks positively at news
- Students are excited – asking questions
- Well received by the Board. They were supportive of our efforts
- Expensive – Article implied
- Early Childhood Staff was concerned about not being mentioned
- Steam Facility Design?
- Open space for all learning spaces
- Excitement about repurpose of High School
- 2 Early Childhood Facilities
  - Provide relief to Elementary Schools
- Students will benefit from locations
- Operational costs

SYNTHESIS PHASING AND COSTING

Members of the Task Force were divided into groups after a review of the reccomendations synthesized by Cuningham Group Architecture, Inc. The synthesis was based on information derived from the Facilities Master Plan Visioning Workshops thus far and the recommendations of the Steering Committee.

The synthesis consisted of two options with some costs associated with the options. A recap follows:

OPTION A ($124,132,805)

1. All elementaries will serve grades K-4
2. New Elementary School (3 potential locations)
3. High School is renovated to Middle School which will serve grades 5-8
4. Probstfield remains District Offices and Early Learning. RRALC and ABE are moved to Probstfield.
5. Horizon Middle School receives 15,000 sf performance space that seats 750 students
6. New High School serving grades 9-12

OPTION B ($139,035,925)

1. All elementaries will serve grades K-4
2. Probstfield is renovated to become 4th Elementary School serving grades K-4
3. High School is renovated to accommodate District Offices, Early Learning, RRALC and ABE.
4. New Middle School on same site as Horizon; Horizon to serve grades 7-8, new Middle School to serve grades 5-6.
5. Horizon Middle School receives 15,000 sf performance space that seats 750 students
6. New High School serving grades 9-12.

The Group gave a quick reveiw and recap of the synthesis presentations as follows:

High School Comments:

- Shops are a good resource for RRALC and the community
- Consider growing options off-site and its impact on High School size (1 @ 1,800 vs. 2,400)
- Alt Bond improvements need to be integrated
- Examine option where High School is remodeled to remain at High School "Transformed 21st Century" – including New Elementary and New Middle Schools

Middle School Comments:

- "Campus": (2) 5-8, or 5-6 and 7-8 Campus

Reflections:

- District spends approximately $1 million/year leasing space

Stories:

- Journey started in 2001
- District built (7) schools between 1952 and 1958
- Built first High School circa 1919
- Built 2nd High School 47 years later
- Built or remodeled in 40+ years later
- Include HTH Video

After the review the Task Force was broken up into into separate teams to review the synthesized options, and make reccomendations based on costs, phasing and scope with the consideration of the Shared Vision Statement, the Facilities Principles, Parameters, the Facility Standards, the Gap Analysis and the results of all the exercises done in the Workshops thus far. Below is a record of the responses:

Group 1:

- Allows time to see if a new High School will be needed
- New High School on land by Horizon (need more land!) 2,400 students
- Two Middle Schools (1,200 students each, grades 5-8)
- Horizon
- Renovate the Moorhead High School existing building
- 4 Elementary Schools – K-4
- Robert Asp
- Ellen Hopkins
- SG Reinertsen
- New by 52 (Southeast Moorhead)
- Early Childhood/Community Education/District Offices
    - Probstfield
- Red River Area Learning Center and Adult Basic Education at current Moorhead High School building with 2nd Middle School
- Addresses immediate needs at Middle School (New) and Elementary School (Eliminating Grade 5)
- New Elementary School
- Option 1: (Referendum 2015, 2016, 2017 Build High School)
    - 1a. Buy ALC and renovate/ move ABE
    - 1b. Build 5-8 campus with auditorium – to open 2017-2018
    - 1c. Probstfield Center for Education remains E-K/district office
    - 1d. Addition to SGR (8 classrooms)
    - 2a. New elementary (SE by 46th Avenue and 40th Street)
    - 2b. Renovate existing 3 Elementary Schools (SGR, Hopkins and Asp)
    - 2c. Kindergarten moves to Elementary Schools (K-4)
    - 3. PCE reverts to Early Learning center with Community Ed and District Offices
    - 4. Renovate significantly existing Moorhead High or build new High School and convert existing building to something

PROCESS

Synthesis & Reccomendations - Workshop 4 - Day 2

- 5. Build 5th Elementary if/when needed – maybe 2023?

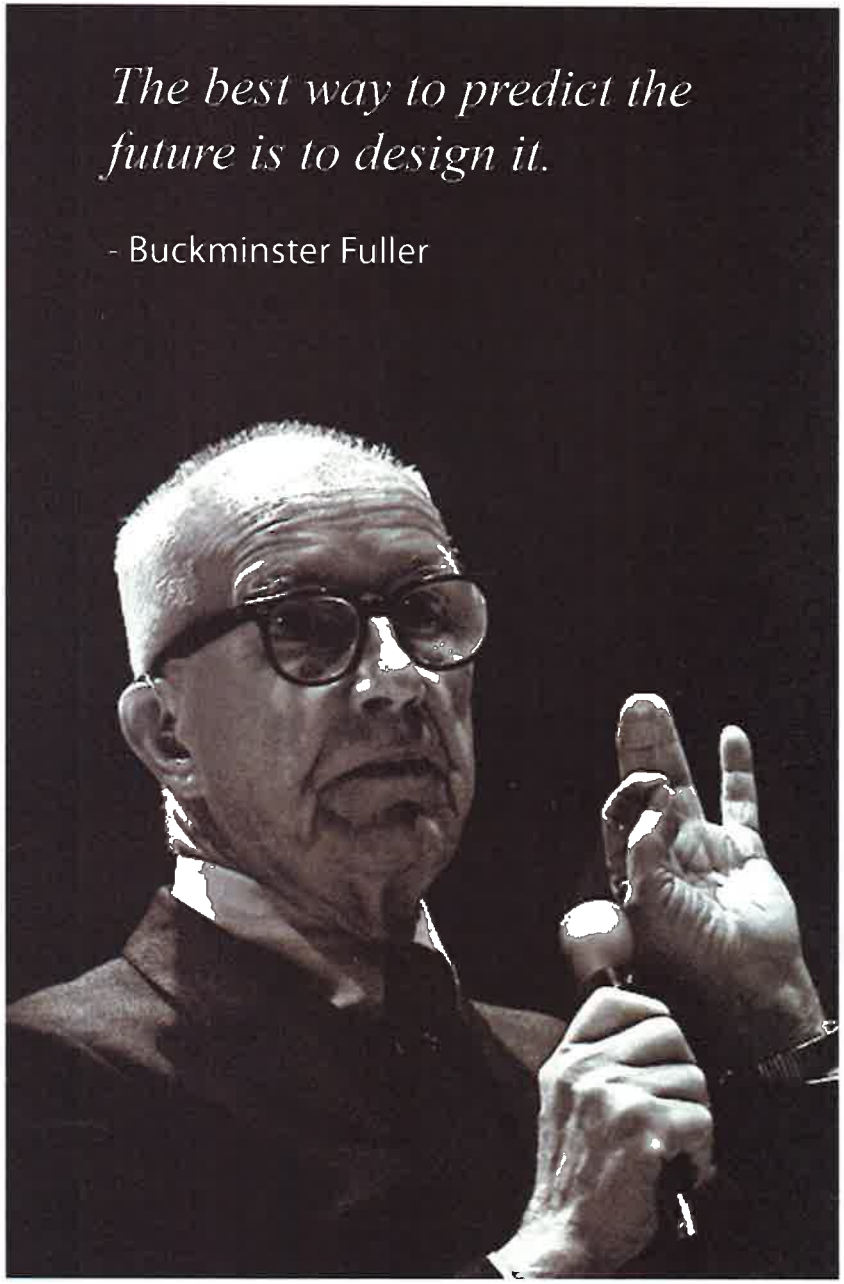
Group 2:

- New:
  - Step 1. EL at Trollwood (5 years)
  - Step 2. Move Administration to High School and High School becomes Middle School (3 years)
  - Step 3. 10 years new High School east of Horizon
  - Step 4. Update Asp/Hopkins with cool stuff (using Lease/ Levy)
  - Step 5. PR now with Staff

- Rebrand RRALC and integrate into Existing High School

Group 3:

- Add 1d. SGR addition to Group 1 Option.



WORKSHOP 4.5 BOARD STUDY SESSION
DECEMBER 15, 2015

After Workshop 4 Cuningham Group Architecture, Inc. took all the feedback received by the Board, Steering Committe and Task Force and synthesized all reccomendations into a single Master Plan solution. This solution was presented at an intermediate Workshop or "Board Study Session."

PURPOSE

To allow the Board the opportunity to offer input with the guidance of the Facilities Master Plan Task Force in an open workshop style, study session. They reviewed the most recent Facilities Master Plan recommendations with opportunities to comment.

PRESENT RECCOMENDATIONS

A presentation of the recommendations for the Facilities Master Plan was presented for review to the "Board Study Session" group; the main factor for consideration was to define cost parameters.

RECOMMENDATIONS

The "Board Study Session" group was presented with the most recent Facilities Master Plan recommendations and given the opportunity to comment. Their comments were as follows:

- Middle School drives the High School
- Is High School big enough? (600 x 4 = 2,400; 1,800?)
- What programs are going to drive the High School (ex. PSEO; on-line learning)
- What opportunities are going to drive the High School?
- Enrollment Issue
    - Has to drive direction
    - Demographics
- 21st Century Learning
- Sticker Shock
- Address enrollment
- High School hard sell
- Public strongly against Kindergarten Center
    - Necessary stepping stone
- Probstfield as Elementary bad idea due to proximity to other Elementary Schools
- Take pressure off Elementary School
    - 5-6 Middle School makes sense, hard sell
    - Performance Arts important, but hard sell
    - Great steps through Grade 8 – nice facilities
    - Left with question, what next?
        - How to address High School
- New High School
    - Need to discuss, but contingent on so many things
- Enrollment issue for the next 7 years needs to be addressed

- Question 21st Century Learning (The "It" thing right now)
- Full time Kindergarten broke us as a District

Items to consider for the future would be:

- Need to use $ efficiently and have ability to analyze numbers (# & st. #s) as we move forward
- Our needs are at Elementary Level
  - Pressure relief is needed now
  - Build Middle School
  - Build Elemementary School
  - Then move Kindergarten back to all Elementary Schools
  - Renovate remaining elementary schools
    - Allows district to recapture space
- This gives time to analyze enrollment trends as well as legislative directions
  - Especially as it effects early learning
- If growth "stops", then there's time to reanalyze
- Need trigger points – to kick start building considerations
- 5-6 Building
  - Transition and educationally and shared space between
- K-4 – grade band and 5/6, 7/8 – define all uses
- Define triggers to remodel or build new for High School
- Need to look at acquisition of land – costs
- 5/6 addition – size of school
- Look at separate middle school possibly
- Survey the Community

WORKSHOP 5
JANUARY 5, 2015

PURPOSE

To present and gather feedback from the Steering Comittee, Task Force and Board as we share the Preliminary Phasing and Costs of the Recommendations put forth by the Facilities Master Plan Task Force.

REVIEW AND RECAP OF RELIMINARY PHASING AND COSTS PRESENTATION

As a result of the previous workshop in which the district board of directors provided feedback, questions and issues of concern on the Facilities Master Plan draft recommendations. The Facilities Master Plan Task Force was assembled to review, consider and comment the numerous items raised by the board.

SYNTHESIS, PHASING AND COSTING

The task force was divided into working groups to refine their facilities master plan recommendations considering the thoughts and comments raised by the board and the response(s) generated by the review.

REVIEW AND COMMENTS FROM FINAL PRESENTATION

- Performance Areas in existing elementary schools was raised as an item to be discussed. The intention was to be able to add a stage to S.G. Reinertsen, Ellen Hopkins, Robert Asp and Probstfield Center for Education to maintain equity across all their schools for the performance arts. This concern is relevant to the construction of the new elementary school being proposed; will the new school have a stage? If so how will equity be maintained? Relevant factors would be:
  - Moorhead is a performing arts community and want the ability for their facilities of all ages to have performing arts spaces
  - Performing arts groups vote, and there is a concern that those votes could be lost.
  - The proposed stage spaces in the existing elementary facilities were included in their previous planning processes. Having them removed doesn't acknowledge work previously done.
  - The community will have to look at itself during the design of the new elementary school to determine if a stage is needed and if so will equity need to be maintained as soon as the new facility opens?
- During the review of the High School there was a lot of talk about pools, or natatoriums. Although not within the scope of the Master Plan, it is an issue that seems to garner much of the attention of the community.
- Concern was expressed for the loss of parking at the renovated High school, which will be addressed.
- Requested maintaining the original Commons area in the existing high school.
- Finding a new use for the existing high school former pool was requested
- Moving the new learning wings in the new High school design closer to the existing 9th grade wing was preferred.

INTRODUCTION

This appendix will provide in full detail the contents of the facility assessment and the final presentation created in conjunction with the Facilities Master Plan Task Force and the Steering Committee provided to the district. It will outline each facility review by field of study and provide specific recommendations for each site.

FACILITY ASSESSMENT

Cuningham Group Architecture Inc. in conjunction with associated design, which included Structural, Mechanical, Electrical, Plumbing and Civil Engineering, conducted an assessment of the Moorhead Area Public Schools existing facilities to determine the current state of each facility. The primary report of the facility assessment is to provide the Moorhead school district with an independent examination of the current state of affairs which would serve to inform/advise the recommendations of the Moorhead Area Public Schools district master plan. The assessment involved a meeting with the facility director and a walkthrough of the facility, the result of which was compiled into the following report.

FINAL PRESENTATION

The final presentation is the culmination of the synthesis of the activities of the Facilities Master Plan Task Force, with the guidance of the steering committee and the input of the district school board. It essentially highlights the results of all the analysis, reviews and goals set by the task force and will serve as a medium of communication to the general public of the process that led to the final reccomendation for the Moorhead Area Public Schools Facilities Master Plan.

Facilities Assessment Summary

Adult Basic Education

Adult Basic Education

West, Main Entry

Building Area:
Not available

Building Vintage:
1962

Adult education is housed in a leased facility shared with Lakes Country Youth Educational Services located at 2215 12th Avenue South. School enrollment is approximately 50 per day with schedules varying. They serve students through GED, ELL, Basic Skills and Community Education.

- Original construction – estimated 1962

Total building area is not available.

The building interior is divided between Lakes Country Youth Educational Services with Adult Basic Education (ABE) occupying approximately one third of the single story building. The academic rooms are organized on either side of the through corridor beginning at the west building entry.

Entry

A main entry on the west side opens directly into a small reception space with a window to the Office. There is no vestibule so cold transfer occurs readily. The short main corridor ends at the largest instructional space. The east entry is for visitors and student drop off. The parking lot is small. The second emergency exit is on the north side of the largest instructional space. The north side of the room was originally designed as an entry vestibule.

East Entry common

Main corridor

Facilities Assessment Summary

Adult Basic Education

Classrooms

Instruction spaces are mostly located on the exterior walls with daylight access. Smaller support rooms are not available. Technology is supported through desktop computers. Digital projection is with portable units.

Collaborative spaces occur within the five instructional rooms. Other than the office the rooms function as teacher planning and small group space. Because class sizes are relatively small they can all function as multipurpose.

Furniture type can be reconfigured but cannot take advantage of best practices of flexible groupings. Many spaces are crowded with furniture to meet the demand. More flexible furniture should be considered with future purchases.

Classroom common computers

Classroom

Instructional Support and Flexibility/Adaptability

The building has many smaller spaces so flexibility is difficult to achieve. Small group space is not available except through low occupancy times. Staff do not have adequate spaces to support individualized/differentiated learning.

Administration

Reception and administration offices are located at the main east entry. The suite includes reception, principal, administrative/counseling offices, workroom, storage, conference and nurse suite.

For the small number of students the office /reception area is adequate and has full observation of the entry door. There is no dedicated health space. Restrooms are not accessible and the stalls are in poor condition.

Building Services / Storage

Deliveries, students and visitors all travel through the main entrance. Trash containers are on the exterior. Service traffic uses the same drive as visitor parking areas.

There is no custodian closet. Custodial activities are accomplished with sinks and storage that is shared by others. This condition should be addressed with a dedicated janitor's space.

Building-wide storage is generally inadequate.

APPENDIX
FACILITY ASSESSMENT - ADULT BASIC EDUCATION

Facilities Assessment Summary

Adult Basic Education

Security/Safety

The main office is located near the visitor entry vestibule with a full view of people as they enter. A secure reception connected to the main entry to maintain access control would be an improvement. Visibility down corridors is generally good but not from normally occupied staff positions.

The street has no walk so pedestrians are using the street at times. Security cameras monitor at Probstfield Center.

Site / Outdoor Learning and Activity

Outdoor learning spaces are not available on the perimeter of the building. Outdoor learning space was not expressed as an important need. No furniture is placed on the exterior.

Exterior Envelope

The primary exterior material is a concrete masonry with a steel roof bar joist structure. Masonry appears to be only one unit wide with little or no insulation. Staff report the building is often cold. The exterior is deteriorating in several locations near the base of the wall. Some areas of the building have joint sealant that should be replaced.

Vestibule – north side

North side

Exterior concrete paving has a slight tip back to the building that holds water. For a slab on grade building this should be corrected to direct water away. Some areas of sidewalk paving are cracked and out of alignment.

Windows

The window system throughout is in fair condition but appears to allow air infiltration. Perimeter classrooms have daylight access through ample sized windows. Most spaces receive daylight.

Roof Assembly

The roof was not included in visual observations. It is a low slope roof and should have annual inspections for maintenance.

Facilities Assessment Summary

Adult Basic Education

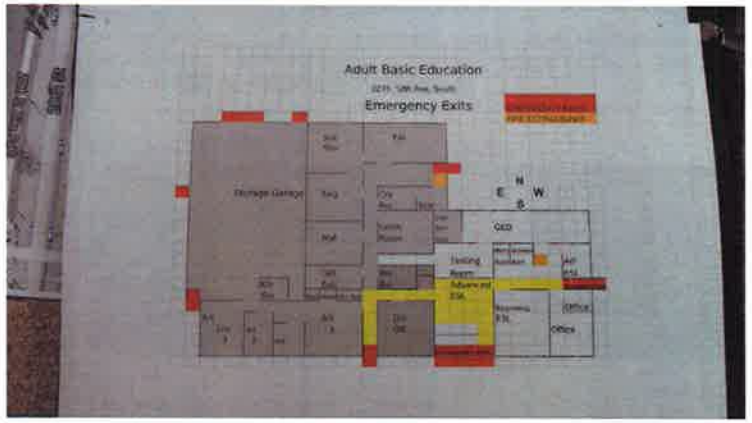
Interior Finishes

Finishes throughout the building are in serviceable condition. Carpet is the main floor finish with vinyl tile in the restrooms and a small area in the office. Carpet varies in age with the majority in poor condition, ready for replacement. Carpet in the entry, main corridor and one classroom is more recent carpet tile in very good condition.

Walls are gypsum board or exterior wall concrete block. Many walls are finished with vinyl wall covering that has evidence of water damage. The water damage on exterior walls appears to be vapor driven through the single wide masonry exterior blocks. Other painted surfaces are in good condition but will need new coatings soon.

Acoustical tile and grid ceilings are generally in good condition.

A sink base is located in the main hall. This serves many uses while it is in a main thoroughfare. Hot water supply is reported to be inadequate. Recharge time is too great.



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September 26th, 2014

Cunningham Group
Attn: Steve Albertson, AIA
201 Main Street SE, Suite 325
Minneapolis, MN 55414

RE: Moorhead Area Public Schools (MAPS) Master Planning
Facilities Condition Assessment – Adult Basic Education
104.0001

Mr. Albertson:

As requested, Heyer Engineering (Heyer) conducted a visual walkthrough and observation of the Adult Basic Education Center, one of Moorhead Area Publics Schools' district wide facilities. The observation took place on August 25, 2014. The purpose of the walkthrough was to observe the condition of the structure and preliminarily assess the building's condition from a structural standpoint to aide with MAPS master planning efforts. The level of assessment performed was not comprehensive in nature in that it was solely a visual assessment of easily accessible areas. Since many of the walls are covered by finishes, wall panels, or earth, our walkthrough and observation was limited visual signs of defects such as cracks, sloping floors, and surface deterioration of materials. Heyer had no access to the roof, so all observations were made from inside or from ground level on the exterior.

Adult Basic Education (ABE)

Existing Structure:

The ABE program is currently housed in a somewhat non-traditional type school building. The ABE program currently occupies the western portion of an older one story office building. Existing drawings of the building were not available for review, but research indicates the structure was built in 1962. The one story structure appears to have been the office and maintenance shop for local electrical construction company. The roof structure for the building is framed by structural steel bar joist and metal deck. Walls appear to be load bearing CMU. The large tall garage storage area, formerly a shop/maintenance garage is framed by the same systems. The building is assumed to be founded upon a cast in place foundation wall and spread footing system.

Visual Observations:

Upon commencing an observation of the interior of the building, in general the building appeared to be in fair condition. In the office portion of the structure most all of the structure is covered by finishes, however no obvious signs of structural deficiencies were present. No noticeable deficiencies were

observed. When viewing exposed structure from inside the garage area, some items of note were observed. Cracks in the CMU walls were observed on the north, south and east walls of the structure. In particular, rather large and lengthy stair-stepping type movement or settlement cracks were seen at the corners and vertical/diagonal cracks were observed near the lintel beam bearing seats of the in filled garage doors. Significant white deposits along the garage door jambs was observed. The white residue likely due to large scale water infiltration at the garage doors/nearby cracks and associated efflorescence in the CMU. Also, water penetration and damage was observed in isolated areas of the metal roof. The concrete slab on grade was also cracked and has seen some vertical movement over the years, although the amount for floor cracking is relatively consistent with industrial buildings of similar age.

Upon walking the exterior of the structure, the overall condition of the building's exterior CMU walls appeared to be in fair to poor condition. The south façade was not accessible for observation. The north façade had many areas where the CMU block face shells have popped out and is being deteriorated.

Summary:

Overall, the building that the ABE is currently housed in appears to be structurally sound at this time, but is in fair condition. The building does not appear to have a current maintenance plan and there are items of deferred maintenance that could be performed to prolong the life of the building, such as crack repair, deteriorated block replacement, etc... At 52 years of age and in its current condition, the building is likely coming toward the end of its useful life span. Heyer would also recommend further investigation into the condition of the CMU that is exhibiting efflorescence.

If you have any further questions or comments, please contact us.

Sincerely,

HEYER ENGINEERING, PC

Eric A. Greiff, PE
Sr. Project Engineer

2

MBN ENGINEERING

September 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Electrical Condition Assessment
Moorhead Schools Master Planning (Adult Basic Education)
Moorhead, MN
MBN Project No.: 14-160

A recent walkthrough of the Adult Basic Education Building, part of the Moorhead School District in Moorhead, MN was conducted. The building is not property of the school district as the space is leased. The electrical systems are also not maintained by the school district. The purpose of this walkthrough was to assess the present condition of the electrical and technology systems within the building. The following systems were included in the assessment:

- Lighting systems and controls
- Electrical power distribution systems
- Fire alarm system
- Telecommunications wiring system (data network and telephone)

Electrical Power Distribution Systems

The local power provider is Moorhead Public Service. The facility has a 208/120 volt, 3 phase electrical service, rated 400 amperes.

The main service panelboard, is in poor condition and does not appear to have a main disconnecting device that meets the current electrical code. There is one load center within the leased space that serves the area used by the school district. The load center is full with no space for additional circuits and is in fair condition.

There are adequate quantities of receptacles in the leased space for the use of the rooms.

Lighting Systems and Controls

Lighting throughout the leased space consists primarily of fluorescent lighting fixtures that utilize T8 lamps and fluorescent ballasts. The light fixtures are in good condition and provide adequate lumens for the tasks. The lighting in the bathrooms is a continuous problem. The light fixtures appear to be overheating causing premature failure of the lamps. Replacement light fixtures should be provided.

Emergency egress and exit lighting in the building consists of emergency lighting fixtures and exit lighting fixtures with battery backup. The fixtures appear to provide adequate lighting for emergency egress and are in good working order.

Fire Alarm System

There is presently a Notifier zone wired fire alarm system in the building. The system provides smoke detection and notification of occupants in the event of an alarm condition. The system appears to be in fair condition and in good working order.

Telecommunications Wiring System

The present telecommunications wiring system consists of a small wiring rack located in the office area.

The horizontal wiring system consists of Category 5 enhanced rated copper cables routed from the wiring rack to the individual data and telephone jacks throughout the building. The cabling and termination jacks are in good condition and functioning properly. The building is not presently on the Moorhead Public School district wide area network.

Camera Surveillance and Security Systems

The leased space presently has a camera surveillance system with cameras in most areas that provide local recording only. The building is not on the school district WAN, thus remote monitoring or access to the recorded data is not available.

Reported by,

Michael A. Berger, P.E., LEED BC&D
Electrical Engineer

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Facilities Assessment Summary

Ellen Hopkins Elementary School

Ellen Hopkins Elementary School


South, Main Entry


East wing

Building Area:
111,005 Sq. Ft.

Building Vintage:
1957 with additions
1989, 1990
1993, 1994 and
2004 Renovation

Ellen Hopkins Elementary School is located at 2020 11th Street South. Opened in 1958, the building was constructed as a junior high school and renovated into an elementary school in 2004.

- Original construction 1958 - 80,000 sf
- 1989 - Special education addition - 1,879 sf
- 1990 - Classroom addition and stage infill - 4,962 sf
- 1993 - Classroom addition, Media Center infill and Administration remodel - 24,146 sf
- 1994 - Elevator addition
- 1999 - PT/OT remodel

Total building area is 111,005 sf

School enrollment is 831 (2012 data) serving students in grades K-5.

The building has a two level academic wing with a double loaded corridor that is oriented north/south on the site. The main entrance is east of the academic wing and connects through the building to the secondary entry on the north. Gymnasium and specialized classrooms are organized on the east half of the building connected by a 'u' shape corridor. A mechanical penthouse is adjacent to the gym.

On the east side of the main entry corridor is the multipurpose/ cafeteria followed by the gym with three cross basketball stations. Two major corridors run east and west separating academic rooms for large cafeteria/ multipurpose and gym spaces. On the north corridor is the music suite, BAC classrooms and the Art Room. The south side corridor has classrooms and one converted kindergarten room.

Entry

Entries occur on the south and north sides; the south side is for visitors and parent drop off. The south side has the largest parking area; a second parking lot is on the west side of the school. Student drop off is in the south parking lot and utilizes a one way traffic flow.

Buses queue on the north side curb line where students enter through a secondary entry into the main north/south hallway. Both sides are fully accessible.

The north entry is directly adjacent to the loading dock and trash enclosure. There is potential for service traffic and students to interact in this area. A better separation is desirable.
The school property has well developed residential neighborhoods on all sides. On the east side is a running track and space for large field sports.

Facilities Assessment Summary

Ellen Hopkins Elementary School


North Entry


West side

Classrooms

Instruction spaces are mostly located on the exterior walls for daylight access. The exception is special education, which is on the north side of the gym.

Staff have collaborative spaces near groupings of six to eight classrooms. They tend to be near stairways in the academic wing helping support visual observation.

Breakout spaces exist primarily in limited areas so are not generally available throughout the building. Their size and location do not support student collaborative work space. Classrooms also function as teacher touch down spaces.

Cabinets from the original construction are appropriate for storage. Cabinet installations have a few areas for minor repairs. Student and teacher furniture is well maintained but varies in age and adaptability. Classrooms are rectangles and furniture is tightly organized


Classroom

The main classroom wing is used for grades 2-5 and has more traditional furniture. Furniture cannot be configurable to take advantage of best practices of flexible groupings.

Original locker rooms on the west side of the gym are converted to a classroom. The room has new finishes but no daylight.

Flexibility could be increased with common areas created in classroom groupings. These could be used for smaller and larger groups with transitional furnishings.

Facilities Assessment Summary

Ellen Hopkins Elementary School

Special Education and Facilities

Special Education is interspersed throughout the building. The spaces are generally sized appropriately and some have a main room and smaller breakout spaces. Although distributed in the building, they are not fully integrated with other instructional spaces. SE staff are housed within teaching spaces.


Special education


Special education

Specialty Classrooms

Art is located on the furthest east end of the building with one studio space and a kiln room directly adjacent. It is remote from other academic program spaces, which reduces potential synergy between programs or collaboration with electronic media. Daylight is very good with north facing windows. The ceiling is sloped giving the room expanded form and daylight. The space is undersized for the variety of equipment and instruction provided.

Storage is located in the main art room and is undersized for the student population, however expansion for storage into adjacent rooms would reduce their usability.

Music is located on the north side in a group of rooms including two rooms with internal storage. The room sizes are on the low side for Minnesota state guidelines but are well suited to their uses. The orchestra room on the east side has been converted to special education. Music storage is in the room only.

Media Center spaces are in good condition. The spaces are central to the academic wing directly west of the administration office. The computer lab is adjacent to the Media Center and a second door goes directly to the technology lab for support functions. The network data center is located in a space next to the Computer Lab and individual cooling.


Media Center


Computer lab

Facilities Assessment Summary

Ellen Hopkins Elementary School

Kindergarten rooms are on the east side of the building between the main gym and secondary gym. The three rooms are adequate in size but are not on exterior walls so they have no daylight. A classroom on the south side of the building has been converted to Kindergarten. It is slightly larger than the original kindergartens and has ample daylight. These spaces have aged well with quality maintenance.


Original kindergarten


Converted Kindergarten

The Park Board uses two rooms on the east side of the building just past the Art Room. The rooms are provided to support programs on the Ellen Hopkins and shared park site.

Gymnasium

The building has two gymnasium spaces; one is from the original construction. The original gym is located east of the cafeteria/multi-purpose space and the addition gym is on the east end of the building. Each gym is complete with a main full basketball court and with two cross stations. An operable partition can separate the original gym halves to provide programming flexibility. The east gym does not have the dividing partition. Gym flooring is resilient and perimeter walls are concrete masonry. The ceiling is exposed steel structure. Sound panels have been added to the upper walls of the Main gym. The gym equipment appears to be in good serviceable condition.


Main gym – folding partition


Addition gymnasium

Instructional Support and Flexibility/Adaptability

The building core has few support spaces sprinkled through the plan. They occur in the form of Staff resource rooms, staff break room and work rooms. Small group space is generally not available with a few exceptions. Staff have few spaces to support individualized/differentiated learning except in the areas of kindergarten and special education.

Flexibility could be increased with common areas created in classroom groupings for smaller and larger groups with transitional furnishings.

Facilities Assessment Summary

The only spaces large enough for all school gatherings are the two gyms.

Staff Spaces

Staff resource rooms occur paired with other rooms so are not generally accessible from the corridor. The locations lessen collaborative use.

Administration

Reception and administration offices are located at the entry front corner of the main entry hallway. The office is open with ample glazing. It has a direct view of the vestibule but lacks the ability to control entry by requiring passage into the office first. This solution could be achieved with a remodeling the inside vestibule to connect to the administration office

Administration functions are spread along the main north and south corridor with quick access to other parts of the school. The nurse area is smaller than expected for the school population. The nurse restroom and vestibule have knob hardware that should be replaced for accessibility.

Cafeteria and Food Service

Cafeteria seating is in six sections at a time with about 150 kids per seating. The space is used for other activities before, during and after school.

Kitchen is in good condition including floor and wall finishes. Some equipment is showing age and should be evaluated by a food service professional, included workflow.

Kitchen

Kitchen Serving

Building Services / Storage

The delivery dock and trash are on the north side of the building directly off the street and adjacent to the north entry doors. There is little separation for buses and deliveries. Loading dock, trash and recycling are in screened enclosure adjacent to the north building entry.

Custodial areas and receiving are adequate in size. Custodian space throughout the building is small with too little storage. As new projects are considered the available custodian space should be expanded. Building-wide storage is too little and not dispersed adequately.

Facilities Assessment Summary

Receiving hall

Security/Safety

The main office is located near the visitor entry with a full view of people as they enter the vestibule. Relocating the office directly adjacent to the public entry and providing a through office entrance control would be a security improvement. Visibility down corridors is good only for limited distances before a turn. Staff spaces are adjacent to corridors and importantly on the connecting corridors north and south so they provide passive observation. This is also true on the academic wing upper level.

Office to Main Entry

Entry Corridor – Looking North

Site / Outdoor Learning and Activity

Fields adjacent to the school are shared land use with the City Park system. Field use is scheduled with the school Principal and the fields have demands outside school hours for youth programs and Tri-City soccer. The track is eight lanes although it does not have a border. It is used by the school but also available for others. The condition is poor and is ready for upgrade.

Playground areas are open to playfields that makes expansion of activities easy. Playground equipment is undersized for the population of the school. The overall equipment and hard surface can support 2-3 classes as once. The school could expand and relocate the playgrounds to better suit different age groups and increase the number of kids accommodated.

APPENDIX
FACILITY ASSESSMENT - ELLEN HOPKINS ELEMENTARY

Facilities Assessment Summary

Ellen Hopkins Elementary School


Play equipment


Hard surface play area

The site can support outdoor learning areas but is not specifically developed for this purpose.

Site / Circulation / Safety

Bus drop off is on the north side of the site and partially in the west parking lot. Parent drop-off and pick-up are primarily through the south parking lot. Parking lot entry is a single drive that causes congestion. The drive has a steep slope so ice conditions and slipping exaggerate the congestion. Creating two drive entrance and exit with one way traffic would reduce flow conditions.

Parking for staff is on the south and west sides of the building. The bus drop off paved area is also the loading dock area access. Trash and service loading is on the same side of the property as the bus and car curb line lot. Maintenance and deliveries should be clearly separated from student areas.


South parking and drop-off


Storage building exterior

Exterior Envelope

The original construction is a brick masonry with a steel roof structure. Glass curtain wall was added to the academic portions of the building in the most recent remodeling.

Brick covers exterior sides of the building where glass does not occur. In many locations the window system starts at the floor line. The foundation ledge is exposed in the original design. Some areas erosion has dropped the finished ground exposing some foundation insulation. The original masonry construction has a minimal wall cavity so the insulation value is low by current energy standards. The perimeter of the building should have the ground grade restored and areas of erosion from drain outlets corrected.

Facilities Assessment Summary

Ellen Hopkins Elementary School

Windows

Perimeter classrooms have daylight access through a 10 year old curtain wall system. The original windows in later additions have insulated glass in aluminum frames. Addition windows are good quality and size.

The curtain wall system, added in the recent renovation, provides ample daylight into instructional spaces located on the building perimeter. Two isolated areas on the curtain wall south addition to the classroom wing were reported to have water leaks under certain wind conditions. The leaks were reported on west and east sides.


Curtain wall - exterior ground


Exposed base of wall

Roof Assembly

The majority of the building has built-up-bituminous roof systems that match the age of the construction so they are 20 years or older. The roof system is near the end of its calculated lifespan. Dark areas on the roof indicate areas with low spots that retain water. At the time of reroof, insulation values and proper slope to drain should be corrected. A thorough review by a roof specialist may determine its actual remaining life expectancy.

Roofs over the classroom wing were replaced in 2012.

Roof over the main entry canopy is a single ply EPDM roof. The slope is inadequate so ponding occurs. When this roof is replaced the slope to scupper drains should be corrected.

Facilities Assessment Summary

Ellen Hopkins Elementary School

Interior Finishes

Finishes throughout the building are in good condition. Original corridor floor is terrazzo that will last the life of the building. Additions have vinyl composition tile in the corridors. Many classroom and support spaces have carpet in good condition.

Acoustical tile and grid ceilings are generally in good condition. Some areas of ceiling tile have slightly sagging panels.

Wall materials are well maintained in good to very good condition. Some high traffic areas need high build paint touch-up.

MBN ENGINEERING

August 25, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Civil Narrative
Moorhead Schools Master Planning (Ellen Hopkins Elementary School)
Moorhead, MN
MBN Project No.: 14-160

Dear Steve:

This letter is a follow up from our site visit on August 25, 2014. The purpose of the visit was to familiarize ourselves to the existing facilities in order to assist with the master planning phase; also we performed a visual assessment review of the existing facility.

We will breakdown our summary based on the civil design components associated with the Ellen Hopkins Elementary School.

Parking Lots/ Athletic Facilities

West Parking Lot
Sidewalks are in good condition. The asphalt pavement and curbs are in need of replacement. I would recommend full replacement in the next two to three (2-3) years. Parking lot has adequate drainage, but there is a lack of storm sewer in parking lot.

Northside
Asphalt near mechanical equipment on Northside is in need of a mill and overlay in the next couple years. The sidewalk along door #9 has settled and separated from foundation wall. This could be a trip hazard and I recommend that it be fixed in the next year. The sidewalk from door #9 to football field is showing signs of movement. This could be a trip hazard and I recommend that they are fixed in the next couple years.

Athletic Facilities
Track is in adequate condition and has good drainage. Track surface is showing signs of delamination caused by water under the track surfacing. There are also large cracks emerging. I would recommend a mill and overlay as well as track surfacing in the next two to three (2-3) years. Concrete around basketball standards are showing signs of frost heaving, I would recommend grinding the concrete down.

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South Parking Lot
There is good drainage in the parking lot with the sidewalk and curb being in good condition. I would recommend a chip seal in two to three (2-3) years.

Utilities

All pertinent public service utilities (sewer and water) appear to be readily available from 20th Ave S, 22nd Ave S, & 11th St S. Utility services are currently in place and the storm sewer appears to be functioning at the current locations.

Erosion Control

For all projects, erosion and sedimentation control is required to prevent sediment transport downstream or off-site. Additionally, projects that are one acre or more in disturbance will be required to follow the guidelines of the Storm Water Pollution Prevention Plan and obtain the National Pollution Discharge Elimination System (NPDES) permit as regulated by the Minnesota Pollution Control Agency (MPCA). Erosion and sedimentation control measures include, but are not limited to, silt fence, inlet protection devices, rock construction exits, and temporary seeding.

Miscellaneous

Items that were not verified, but may be requisite with a building addition include:
1. Verification of parking required compared with provided.
2. ADA compliance of any disturbed area that serves as an ADA route.
3. Impervious coverage allowable compared to total impervious existing and proposed.
4. Size of storm water management suitable to meet requirements.

Summary

The purpose of our site visit was to provide a site conditions visual inspection assessment. As mentioned, our recommendations are primarily maintenance based with three (3) parking lots and athletic facilities requiring more immediate improvements.

If you have any questions, please contact me at 701-478-6336.

Sincerely,

Joshua M. Magelky, P.E.
Civil Engineer

sk

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Structural Consultant
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September 26th, 2014

Cunningham Group
Attn: Steve Albertson, AIA
201 Main Street SE, Suite 325
Minneapolis, MN 55414

RE: Moorhead Area Public Schools (MAPS) Master Planning
Facilities Condition Assessment – Ellen Hopkins Elementary School
104.0001

Mr. Albertson:

As requested, Heyer Engineering (Heyer) conducted a visual walkthrough and observation of Ellen Hopkins Elementary School, one of Moorhead Area Publics Schools' district wide facilities. The observation took place on August 19, 2014. The purpose of the walkthrough was to observe the condition of the structure and preliminarily assess the building's condition from a structural standpoint to aide with MAPS master planning efforts. The level of assessment performed was not comprehensive in nature in that it was solely a visual assessment of easily accessible areas. Since many of the walls are covered by finishes, wall panels, or earth, our walkthrough and observation was limited visual signs of defects such as cracks, sloping floors, and surface deterioration of materials. Heyer had limited access to the roof, mainly the low roofs, so most observations were made from inside or from ground level on the exterior.

Existing Structure:

The existing building is a two story school facility originally built in 1957 and is approximately 106,000 SF. A number of additions were made between 1989 and 1993, and a major remodel converting the building into an elementary school was done in 2003. Original construction documents were not available for review. It appears the roof structure of the original building consists primarily of thin, lightweight precast concrete planks supported by steel bar joists supported by masonry walls and/or a steel beam and column system. The roof for the additions are framed with steel joists with metal deck. The gymnasiums walls are CMU. The original second floor looks to be a cast in place concrete deck supported by steel beams and columns. The exterior façade consists of brick veneers and glazing systems. The exterior foundation wall is cast in place concrete resting upon what is assumed to be concrete spread footings. A concrete slab on grade is utilized as the 1st floor structure.

Visual Observations:

Upon commencing an observation of the interior of the building, in general the building structure appeared to be in good condition. The building looks to have been well maintained over the years. Again most of the building is covered in finishes, so direct observation of the building's structure was limited.

The slab on grade concrete floors were mostly covered by finishes in classroom and office areas, mainly VCT or carpet, but no noticeable signs of any structural issues were observed. The main corridor hallway floors are terrazzo and did show some periodic cracking. However, none of the cracks seemed inconsistent with the age of the building. Also, none of cracks observed, exhibited any major vertical or horizontal movement that would might indicate a structural concern. The expansion joint placed between the 1989 addition and the original structure did show some wall cracks and distress with the floor finishes. There was also some minor cracking in the CMU stair shaft and gypsum/plaster interior walls near the transition. These cracks are likely due to settlement of the addition structure and most of the predictable settling the addition structure should experience is likely to have occurred by now.

Upon walking the exterior of the structure, the overall condition of the building (brick veneer and glazing) appeared to be good.

Summary:

Overall, Ellen Hopkins Elementary appears to be structurally sound and in good condition. The building has been well maintained over its lifespan. Heyer does recommend continued periodic monitoring of the floor wall cracks around the stair well and expansions joints. While it is likely the building is no longer settling out, other latent extent conditions could be at work if significant future movement is observed.

If you have any further questions or comments, please contact us.

Sincerely,

HEYER ENGINEERING, PC

Eric A. Greiff, PE
Sr. Project Engineer

ONE

OBERMILLER NELSON
ENGINEERING

MECHANICAL EVALUATION – ELLEN HOPKINS ELEMENTARY

Date	October 2014
Project #	2014172
Project Name	Moorhead Schools Masterplan
Project Location	Moorhead, MN
Description	Evaluate HVAC Systems at the Ellen Hopkins Elementary

Mechanical Overview:
The school was built new in 1956 with multiple additions and remodels over the years. All of the classroom units were replaced in 2000. All systems are in good working order with few problems. The building is heated and cooled throughout and is completely covered by an automatic fire protection system.

Heating System:
Hot water for the building heating system is generated using two (2) 60 BHP boilers installed in 2010 with one (1) 90 BHP boiler from the original construction us as backup and additional heat if needed. The boilers are natural gas fired with fuel oil backup. Hot water from the boilers is circulated throughout the building with base mounted pumps.

The building is heated using classroom unit ventilators in each classroom. Fin tubed radiation is used at the exterior walls and under the windows. Cabinet unit heaters are used in the vestibules and suspended unit heaters are located in the storage and mechanical rooms.

The heating system is in fair condition.

Cooling System:
Cooling for the building is furnished by an air cooled chiller located on grade to the north of the mechanical room. A circulating pump in the boiler room distributes chilled water to cooling coils in each of the classroom unit ventilators and air handlers.

The cooling system is in fair condition.

Ventilation System:
Air handlers are located in mechanical rooms in various parts of the facility. An air handler on the roof feeds variable air volume boxes in the administration area and the media center and is equipped with variable frequency drives to allow reduced air flow and energy savings during unoccupied times. All air handlers are in fair condition.

Each classroom is zoned using classroom unit ventilators. Located in each room, the units draw fresh air from louvers through the exterior wall and the heating /cooling coils modulate to satisfy the thermostat setpoint.

BUILDING SYSTEMS CONSULTANTS

FARGO
2201 12th St. N Suite D
701.280.0500

GRAND FORKS
311 4th St. S Suite 203
701.775.2594

BISMARCK
233 West Rosser Ave.
701.222.0520

ALEXANDRIA
503 Hawthorne St. Suite 141
320.846.0300

Plumbing:
The domestic water equipment and piping is in fair condition.

Fire Protection:
The building has a complete wet fire protection sprinkler system that is in good condition.

Automatic Temperature Controls:
The automatic temperature controls in the building are electronic and in good condition. No system upgrades are required at this time.

MBN ENGINEERING

September 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Electrical Condition Assessment
Moorhead Schools Master Planning (Ellen Hopkins Elementary)
Moorhead, MN
MBN Project No.: 14-160

A recent walkthrough of Ellen Hopkins Elementary, part of the Moorhead School District in Moorhead, MN was conducted. The purpose of this walkthrough was to assess the present condition of the electrical and technology systems within the building. The following systems were included in the assessment:

- Lighting systems and controls
- Electrical power distribution systems
- Fire alarm system
- Class call and clock system
- Telecommunications wiring system (data network and telephone)
- Camera surveillance and security systems

Electrical Power Distribution Systems

Ellen Hopkins Elementary was built in 1958 and was remodeled in 2004. The local power provider is Moorhead Public Service. The facility has a 2,000 ampere, 208/120 volt, 3 phase electrical service that provides power to the entire facility. The peak demand for the facility was 591 KVA or 1,642 amperes and it was recorded in August of 2014. This reading is at 80% of that rating of the main fuses. This needs to be monitored closely as the main device is essentially at maximum capacity.

The 2,000 ampere main service switchboard is in good condition and has some space available for additional distribution circuit breakers for future equipment in the facility. The original main switchboard is now fed from the new switchboard, but remains in place. This piece of equipment is 55 years old and should be replaced. The mechanical HVAC systems in the facility are fed at 208 volts, 3 phase. The motor control centers, motor starters and variable frequency drives for the HVAC system pumps, air handling units and fans are generally in good condition. There are a small number of stand-alone motor starters from the original 1958 project that are in place that should be replaced. The remainder of the

power distribution equipment in the facility consists of panelboards to power the branch circuit receptacles, the lighting systems, and other equipment throughout the facility. About one-half of the panelboards were installed since 2004 and are in good condition with some space in most areas for additional circuits to be added for new equipment or modifications. The remainder of the panelboards in the facility are from the original 1958 construction project. All of those original panelboards should be upgraded as they are past their rated service life.

The quantity of receptacles and circuits in the existing classrooms, receiving area and gymnasium is not adequate for the technology equipment and other equipment being utilized in those spaces. Additional receptacles and circuits should be added to avoid use of extension cords and overloaded circuits.

Lighting Systems and Controls

Lighting throughout much of the facility consists primarily of fluorescent recessed lighting fixtures that utilize T8 lamps and fluorescent ballasts. The light fixtures are in good condition and utilize a light source that is energy efficient. There are a few areas that utilize downlights with compact fluorescent lamps. It is recommended that a replacement LED light fixtures be explored for these light fixtures to provide better energy efficiency and to replace a lamps that tends to fail prematurely and is expensive to replace.

In addition, the lighting in the media center appears to be a little lower than desirable. This lighting level should be reviewed more closely to determine if additional lighting is warranted.

Emergency egress and exit lighting throughout much of the building consists of emergency light fixtures with battery backup. Many of these fixtures are fairly new and appear to be operational, however some of the fixtures are older and likely need to be upgraded.

Exterior lighting consists of exterior building mounted light fixtures and pole mounted parking lot light fixtures. The light fixtures are in good condition and utilize HID light sources. An LED upgrade to the HID fixtures should also be evaluated, however an economical upgrade or replacement is more difficult to obtain.

Fire Alarm System

The fire alarm system is a Simplex 4010 analog addressable system and the facility presently has a wet pipe fire suppression system.. The fire alarm system is in good condition. The system appears to have adequate coverage for the annunciation horn/strobes and the detection devices appear to be located as required by the building code.

Class Call and Clock System

The existing class call and clock system is a Rauland Telecenter ICS system. The system has paging and talk-back speakers with clocks located in all of the classrooms and in other spaces in the facility where an instructor or administrator needs to communicate with the main office. In addition, paging speakers are located in the corridors, commons, gymnasiums and other large areas to provide change of class period tones and for general announcements. The system is in good condition and appears to be working properly.

Telecommunications Wiring System

The present telecommunications wiring system consists of a main distribution room located on the first floor near the media center with several intermediate distribution closets located throughout the facility. The data network backbone cabling system is multimode fiber optic cable interconnecting the wiring closets. The analog telephone system backbone cabling system is multipair, category 3 copper cabling interconnecting the wiring closets. The backbone cabling system and wiring closets are in good condition and have space for additional connectivity.

The horizontal wiring system consists of Category 5 enhanced rated copper cables routed from the wiring closets to the individual data and telephone jacks throughout the building. The cabling and termination jacks are in good condition and functioning properly.

Also, the classrooms presently are outfitted with analog tube style televisions. These displays are not compatible with modern high definition signals for instructive purposes. It is recommended that the televisions be replaced with high definition flat panel displays sized for adequate viewing in the room and that HDMI cabling be considered for interconnections to the displays.

Camera Surveillance and Security Systems

The facility presently has a digital camera surveillance system that utilizes Pelco digital cameras with a central network video recorder. The system is in good condition. In addition, the facility has a Lenel access control system to allow for card key access to certain doors throughout the building. The system is in good condition and can be expanded.

Reported by,

Michael A. Berger, P.E., LEED$_{BC\&D}$
Electrical Engineer

Facilities Assessment Summary

Horizon Middle School


East, Main Entry


South entry

Building Area:
228,000 Sq. Ft.

Building Vintage:
2004

Horizon Middle School is located at 3601 12th Avenue South. The building opened in 2004, was designed for and serves Grades 6 through 8.

- Original construction 2004 – 228,000 sf

Total building area is 228,000 sf

School enrollment is 1,315 (2014/2015 year) serving students in grades 6-8.

The building is organized in three wings: academic, cafetorium/music and athletic/support. The academic wing is organized with a 'T' shaped corridor on three floors. The corridors are single loaded providing daylight. The main entrance is east of the building with academic to the north and the remaining functions on the south. Gymnasium and specialized athletic classrooms are organized on the west half of the building with receiving and support spaces. Academic classrooms are organized in 'house' groups connected around a common resource room. A mechanical penthouse is adjacent to the gym.

The administration suite is located facing the entry vestibule and across the main corridor. Corridors of the academic wings have long locker bays. Academic 'houses' have special education and teacher planning rooms are part of the Team Resource spaces. Inside the vestibule is a two story open space connected to the Cafetorium on the south. The Media Center is located on the second floor sharing one wall with the north side of the two story space. On the west end of the building are Cafeteria, Kitchen, Gym and Receiving.

Entry

Entries occur on each side of the building. The east entry is for visitors and parent drop off with a connection to south side parking. A bus drive and parking lot are located on the south side of the building. The west entry is primarily for access to the fields and track. The north entry is connected to a staff parking lot. Entrances are fully accessible.


East Entry


Northwest/staff entry

Facilities Assessment Summary

Horizon Middle School

Classrooms

Instruction spaces are mostly located on the exterior walls with daylight access. Smaller support rooms are the exception. Special education rooms are interspersed on both floors. Technology includes digital projection.

Collaborative spaces occur with a group of five classrooms. Support spaces include teacher planning and small group rooms. The Team Resource areas are open as a commons to classroom groupings. They are supported with digital projection and marker boards but have no storage. Breakout spaces exist throughout the building. Their size and location supports student collaborative work space. Classrooms also function as teacher touch down spaces.

Cabinets throughout the building are equitable and are appropriate for storage. Student and teacher furniture is well maintained but varies in adaptability. Classrooms are rectangles and furniture is tightly organized. Student desks are traditional single worktop. Furniture type is able to be reconfigured but cannot take advantage of best practices of flexible groupings. More flexible furniture should be considered with future purchases.


Classroom common computer lab


Team Resource

Special Education and Facilities

Special Education is interspersed throughout the building. The spaces are generally sized appropriately and some have a main room and smaller breakout spaces. A concentration of Special Needs rooms are located north of the administration suite. SE staff are housed within teaching spaces. In one restroom the towel dispenser reduces the accessible area at the sink.


Special education


O.T Room

APPENDIX
FACILITY ASSESSMENT - HORIZON MIDDLE SCHOOL

Facilities Assessment Summary

Specialty Classrooms

Art is located on the first floor in the academic wing. It has one studio space with a small lab, office and kiln room. Adjacent to art is the Control room for larger project work and recording. The location is conducive to collaborative projects and learning. Daylight is available on one wall with east light. The space is adequately sized but lacks space for a variety of equipment and instruction options.

Storage is located in the main art room and in one small adjacent room. Storage is inadequate for this program.

Music is located in the south wing surrounding the major presentation space of the Cafetorium. It is a separate location away from other academic rooms, providing sound isolation. The group of rooms includes orchestra, band, choir and general music. The room sizes are well suited to their uses with high ceilings and acoustical treatment. Program offices are part of the suite of rooms but lack individual practice rooms. Storage occurs within the rooms, with separate rooms for instruments.

The adjacent cafetorium is intended to be the primary performance space in the building. The space lacks acoustical treatment and main building circulation paths are on the edge of the seating area. Seating is provided with stack chairs in three tiered areas in front of the stage. The space is not large enough to hold the entire student population seated.

Concerts are held at the High School, NDSU and churches. Orchestra is a popular program with about 130 participants per grade level.

Choir


Orchestra

Theater has a single space on the second floor of approximately 1,200 square feet. It is a nine week course so the small space is adequate.

Facilities Assessment Summary

Science has space on each floor of the academic wing. Spaces are well furnished with storage in the labs. The prep spaces are undersized and must also function as separate storage.


Science Lab

Media Center occupies a space on the corner of the academic wing on the second floor. It has a main space with seating, stacks and computers with a side computer room. Support rooms include media specialist office, A/V storage and Media Center workroom. Technology support functions are directly below on the first floor. The space is used for meetings as well as Media Center functions.

Gymnasium

Gymnasium space is located on the west side of the building along the main corridor and west entry. It has a main basketball court with four cross stations. An operable partition can separate the gym halves to provide programming flexibility. Gym flooring is wood and perimeter walls are concrete masonry. Although the upper walls have sound perforated concrete block, the space is highly reverberant. Sound absorption panels are recommended to reduce reflective sound waves. Exterior doors have translucent wall panels above to the roof structure that provide diffuse south exposure daylight. The ceiling is exposed steel structure. There are two long storage rooms on the north side of the main gym providing adequate storage.

On the west side of the main gym is an auxiliary gym. This space has resilient flooring with perimeter walls of concrete masonry. The ceiling is exposed steel structure. The west wall has a low band of continuous windows with horizontal wood louvers to diffuse daylight. Above the windows to the roof are wood sound panels.

The gym equipment appears to be in good serviceable condition.

Across the main building hallway is Weight Room and Locker Rooms. Coaches and PE offices are integrated with the locker room suites. Coaches offices are also accessed from the main building corridor. These spaces are in good condition.

Facilities Assessment Summary

Horizon Middle School


Main gym


Auxiliary Gym

Instructional Support and Flexibility/Adaptability

The building has support spaces dispersed throughout the plan. They occur in several forms of staff resource rooms, staff break room and work rooms. Small group space is available on the second floor but not uniformly in the academic wing. Staff do not have adequate spaces to support individualized/differentiated learning.

The only space large enough for all school gatherings is the gym which has poor acoustics.

Staff Spaces

Staff have collaborative spaces in the center wing near groupings of five classrooms. They occur along the academic corridor and adjacent to the Team Resource spaces so they are ideal for visual observation of these common areas. Some are located adjacent to locker bays also promoting passive security through observation.

Staff Planning


Workroom

Administration

Reception and administration offices are located at the main east entry. The suite includes reception, principal, administrative/counseling offices, workroom, storage, conference and nurse suite.

Facilities Assessment Summary

Horizon Middle School

Reception is across the hallway from the entry vestibule. They have a direct view to the vestibule but lack the ability to control entry by requiring passage into the office first. Some building elements obscure a complete view for workstations to the vestibule. A remodeling could achieve corrections by creating a new space for reception adjacent to the vestibule.

The nurse area is small for the school population. The refrigerator is located near the cots and should be moved to a secure location. The restroom towel dispenser is reducing the accessible access to the sink.

Administration functions are spread along the main north and south corridor with quick access to other parts of the school.

Cafeteria and Food Service

Cafeteria seating occurs by grade and seats approximately 450. Serving utilizes three lines and seating is in the Cafetorium. The space is used for other activities before, during and after school so scheduling is not ideal in the middle of the school day.



Cafetorium

Kitchen is in very good condition including floor and wall finishes.


Kitchen


Serving

Facilities Assessment Summary

Building Services / Storage

The delivery dock and trash are on the west side of the building on the south side of the gym. Service traffic uses the same drive as buses and visitor parking areas. Ideally service drives would be separate. Loading dock trash and recycling are screened.

Custodial areas and receiving are adequate in size. Custodian space throughout the building is small with too little storage. Building-wide storage is dispersed but varies in size based on building location. In general custodial space and storage is short of need.

Security/Safety

The main office is located near the visitor entry vestibule with a full view of people as they enter the vestibule. A secure reception connected to the main entry vestibule to maintain access control would be an improvement. Visibility down corridors is generally good. Staff spaces are adjacent to team resource spaces providing observation for passive security. This is also true on the academic wing upper level.

Site / Outdoor Learning and Activity

Outdoor learning spaces are available on the perimeter of the building although they are not developed. There are opportunities for other outdoor learning settings.

Athletic fields are ample for the current population of the school and share use with the community. Refer to the civil engineering report for additional information.

Site / Circulation / Safety

Bus drop off is on the south side of the site. The bus drive is shared with the largest parking area and the service drive. Curb cuts are all along the east side of the site creating congestion at times. Bus parking is along a curb from a drive lane used by visitors.

Parent drop-off and pick-up occurs on a loop road to the east entry. The bus and visitor parking have separate drives but the curb cuts are close together creating congestion. Parents drop off has a two way drive but left turning creates slow movement. A site improvement would be a separate exit drive and moving the bus and visitor curb cuts further apart.

Trash and service loading are well separated on the property.

Accessory storage building

Receiving and trash beyond

Facilities Assessment Summary

A separate storage building is on the south side of the building adjacent to loading dock. The building is a one story wood frame structure.

Exterior Envelope

The primary exterior material is a brick masonry with a steel roof structure. The gym has horizontal metal cladding. The exterior is in very good condition. Some areas building joint sealant has lost bond and should be replaced. A few brick have spalled faces at lintels. These locations are experiencing some excess loads but repairs appear readily achievable.

Brick exterior –west exposure

Gym metal cladding with glazing above doors

Brick broken at lintel - west exposure

Brick and curtain wall

An approximate 3 inch gap occurs at the end of a brick lintel on the east end of the academic wing. It should be closed to prevent birds nesting and maintain full envelope enclosure.

Exterior concrete stoops have some slight damage where concrete walks have settled. In some cases the difference is close to not meeting accessibility code. These conditions are covered in the Civil engineering report.

Windows

The window system throughout is in good condition. Perimeter classrooms have daylight access through ample sized windows. Most spaces receive daylight.

Roof Assembly

The building has single ply EPDM roof with rock ballast and is about 10 years old. The roof system is approximately through half of its calculated lifespan. The roof was reported to have annual inspections for maintenance.

Facilities Assessment Summary

Horizon Middle School

Interior Finishes

Finishes throughout the building are in good condition. The main corridor floor is terrazzo that will last the life of the building. A few areas have cracks in the terrazzo floor that appear to be caused by movement. They also appear to be stable and may only need cosmetic corrections. The cracks in some cases run across several rooms. The dimension is not great enough for immediate attention and can be monitored for future changes.

Secondary corridors have vinyl composition tile in the corridors. Many classroom and support spaces have carpet in good condition.

Acoustical tile and grid ceilings are generally in good condition. Some areas of ceiling tile have stains from pipe leaks. Locker commons on the third floor have substantial wear on the ceiling system from abuse. Lockers in this area have number plates vandalized.

Wall materials are well maintained in good to very good condition. In a few areas there were cracked gypsum board conditions that appeared to be related to movement in soffits, and walls near joints. These are cosmetic and can be addressed through maintenance.

MBN ENGINEERING

August 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Civil Narrative
Moorhead Schools Master Planning (Horizon Middle School)
Moorhead, MN
MBN Project No.: 14-160

Dear Steve:

This letter is a follow up from our site visit on August 18, 2014. The purpose of the visit was to familiarize ourselves to the existing facilities in order to assist with the master planning phase; also we performed a visual assessment review of the existing facility.

We will breakdown our summary based on the civil design components associated with the Horizon Middle School.

Parking Lots/ Athletic Facilities

North Parking Lot
Overall condition of the parking lot is in good condition. The curbs are in good shape, there is one spot where curb is broken and should be replaced near the inlet. Cracks in the asphalt are minimal, a chip seal would be recommended to rejuvenate surface in the next two (2) years. Solid manhole cover in the lot should have a concrete collar around it. This is done due to the fact that compaction of asphalt around castings tends to be lacking and infiltration around the casting is common. The concrete collar should be done in the next year. Sidewalks are in excellent condition. Near doors #7, #9, #10, and #11, there are gaps between the sidewalk and stoops. These could be trip hazards and I recommend that they are fixed in the next year.

Parent Drop-off Loop on East Side
Overall condition of parking lot is in good condition and the curbs are in good shape. Drainage in the parking lot is good. The curb near the inlets on east and south side of bus loop has pushed up. This should be repaired to ensure water doesn't pond and damage the asphalt pavement in the next year. Cracking is minimal in the lot and I recommend a chip seal in the next two (2) years. Sidewalks are in good condition with some signs of settling.

MBN ENGINEERING, INC. • Mechanical • Electrical • Civil • Transmission
503 7th St N • Suite 200 • Fargo, ND 58102 • phone: 701.478.6336 • fax: 701.478.6340 • www.mbnengr.com

Bus Parking
Northside (west half)
Two (2) inlets have raised and both need to be lowered. This should be repaired to ensure water doesn't pond and damage the asphalt pavement in the next year. Overall condition of lot is good, a little more cracking than the other lots. Routing and crack sealing recommended as well as chip seal in the next two (2) years.

South Parking Lot
There are signs of storm sewer movement. Recommend televising storm sewer to make sure no pipe separation. Recommend digging up 65' x 10' section and fixing in the next year. Missing four (4) handicap accessible signs in the parking lot, recommend installing new signs in the next year. Replace concrete collar around both inlets in parking lot, this should be done in the next year. Cracking minimal in parking lot, recommend chip seal in the next two (2) years. Sidewalks and curbs are in good condition. There is settling along the inlet on southwest side of lot. This should be repaired to ensure water doesn't pond and damage the asphalt pavement in the next year.

Athletic Complex
Track: Overall in good condition, surfacing is sound; however, the curbs on the inside and outside of the track have separated from the asphalt. These gaps allow water to seep into the subbase of the asphalt causing shortened life span. Recommend mill and overlay of the track in the next five (5) years.

Concrete around left and right field foul poles are showing signs of frost heaving, I would recommend grinding concrete down.

Baseball field: Couple cracked pieces of sidewalk on north side of garage near baseball field. These should be fixed in the next couple years.

Chain-link fence around the discuss pads does not meet new regulations, I recommend a netting system similar to Moorhead High School.

Utilities

All pertinent public service utilities (sewer and water) appear to be readily available from 12th Ave S & 40th St S. Utility services are currently in place and the storm sewer appears to be functioning at the current locations.

Erosion Control

For all projects, erosion and sedimentation control is required to prevent sediment transport downstream or off-site. Additionally, projects that are one acre or more in disturbance will be required to follow the guidelines of the Storm Water Pollution Prevention Plan and obtain the National Pollution Discharge Elimination System (NPDES) permit as regulated by the Minnesota Pollution Control Agency (MPCA). Erosion and sedimentation control measures include, but are not limited to, silt fence, inlet protection devices, rock construction exits, and temporary seeding.

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1. Verification of parking required compared with provided.
2. ADA compliance of any disturbed area that serves as an ADA route.
3. Impervious coverage allowable compared to total impervious existing and proposed.
4. Size of storm water management suitable to meet requirements.

Summary

The purpose of our site visit was to provide a site conditions visual inspection assessment. As mentioned, our recommendations are primarily maintenance based with four (4) parking lots and an athletic facilities requiring more immediate improvements.

If you have any questions, please contact me at 701-478-6336.

Sincerely,

Joshua M. Magelky, P.E.
Civil Engineer

sk

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September 26th, 2014

Cunningham Group
Attn: Steve Albertson, AIA
201 Main Street SE, Suite 325
Minneapolis, MN 55414

RE: Moorhead Area Public Schools (MAPS) Master Planning
Facilities Condition Assessment – Horizon Middle School
104.0001

Mr. Albertson:

As requested, Heyer Engineering (Heyer) conducted a visual walkthrough and observation of Horizon Middle School, one of Moorhead Area Publics Schools' district wide facilities. The observation took place on August 18, 2014. The purpose of the walkthrough was to observe the condition of the structure and preliminarily assess the building's condition from a structural standpoint to aide with MAPS master planning efforts. The level of assessment performed was not comprehensive in nature in that it was solely a visual assessment of easily accessible areas. Since many of the walls are covered by finishes, wall panels, or earth, our walkthrough and observation was limited visual signs of defects such as cracks, sloping floors, and surface deterioration of materials. Heyer had very limited access to the roof, so most observations were made from inside or from ground level on the exterior.

Existing Structure:

The existing building is a three story middle school facility. The originally structure was built in 2003 and is approximately 230,000 SF. As shown on the original construction documents, most roof structures, high and low, are constructed of steel bar joists supported by structural steel beams and columns or load bearing CMU. 2nd and 3rd floors are constructed of 8" and 12" precast concrete hollow core planks with a 3" topping. Floor planks are supported by either structural steel beams and columns or CMU load bearing walls. 1st floor is a concrete slab on grade. The entire building is founded upon a system of concrete foundation walls and concrete spread footings. There are also two small storage outbuildings on the campus, presumably framed with wood trusses and wood stud bearing walls with brick veneers.

Visual Observations:

Upon commencing an observation of the interior of the building, in general the building appeared to be in very good condition, as expected considering the building's age. In the classroom spaces, almost all of the building structure's floors, ceilings, and walls are covered by finishes (carpet, VCT, gypsum board, ACT, etc, so a structural observation is limited to visual signs. Some areas of very isolated cracking were observed in masonry walls and floors. The cracks observed did not seem to indicate any structural failures

or concerns but rather seem to indicate locations where thermal expansion or floor control jointing may be present. In the corridors, the major floor finish is terrazzo. Multiple cracks in the terrazzo were observed on the 2nd and 3rd floors. Less cracking was observed on the ground level. The upper floor cracks seemed to follow possible joint lines in the structural precast framing below. In the Gymnasium, cracking was present at lintel beam bearing locations in the south wall. The cracks appear to have formed post construction, but are not new and appear to have been present for some time. The most likely cause is the incorrect construction of the slip joint bearing connection to allow for thermal and moisture expansion of the CMU wall. The cracks are likely not a structural concern at this time, but should be monitored for future increases in size. Lastly, there were a few isolated diagonal type cracks observed in the gypsum board and CMU walls. These cracks were most likely caused by minor settlement of the structures and are not a structural concern at this time.

Upon observing the exterior façade, a large portion the building is cladded with a brick veneer. The vast majority of the brick is in satisfactory condition. Isolated small/minor areas of white residue, possibly due to efflorescence was observed. Also, one small brick pop out was observed on the west elevation. Mortar joints appeared to be sound and in good condition. In addition, while not a structural concern a number of bumps in the paved surfaces were noted at stoop to side walk transitions. The structural stoops appear to functioning as intended and the adjacent sidewalk slabs appear to have affected by seasonal changes in ground moisture and frost heaving.

Summary:

Overall, the Horizon Middle School building appears to be structurally sound and in good condition. Isolated areas of cracking were observed in the floors and walls. While the cracks at this time in our opinion due not represent a structural concern, continued monitoring of cracks is recommended as future movements and environmental conditions can be unpredictable. CMU cracks in the gymnasium at the lintel bearing locations should be repaired as future remodeling or other construction projects at the school are undertaken.

If you have any further questions or comments, please contact us.

Sincerely,

HEYER ENGINEERING, PC

Eric A. Greiff, PE
Sr. Project Engineer

ONE

OBERMILLER NELSON
ENGINEERING

MECHANICAL EVALUATION – HORIZON MIDDLE SCHOOL

Date	October 2014
Project #	2014172
Project Name	Moorhead Schools Masterplan
Project Location	Moorhead, MN
Description	**Evaluate HVAC Systems at the Horizon Middle School**

Mechanical Overview:
The mechanical systems and equipment in the building were installed when the building was new in 2003. There have been some issues since the completion of the mechanical construction which include high energy use and high indoor air pressure which causes doors to stand open. Other than these two specific items the actual equipment in the school is in good condition.

Heating System:
The building is heated through 8 - 2 MMBtuh high efficiency hot water boilers. The boilers heat hot water which is distributed throughout the building to terminal heating equipment. The hot water also feeds a plate type heat exchanger that has glycol hot water on the opposite side that is distributed to the Air Handling Units. The glycol prevents freezing of the AHU coils in the winter.

The hot water distribution loop is a direct return type of system. A direct return type of heating system requires that all terminal devices be individually balanced so they get the appropriate amount of hot water flowing to them. The system has inherent difficulties with being evenly balanced. This type of system is rarely designed for this large of a building. New equipment has been introduced since this heating system was designed that would allow the system to be more self-balancing. The bottom line is that there are potentials for areas that do not heat well and areas where hot water heating noise due to high velocities can be a problem.

The heating equipment in the school consists of a small amount of wall mounted baseboard radiation, some suspended unit heaters for storage rooms and such and terminal heating coils in the air distribution ductwork. This heating system requires the air distribution system to run continuously to keep the building heated during cool weather. This is an energy inefficiency that cannot be remediated.

Ventilation System:
The buildings ventilation system is similar throughout. The ventilation systems are what are called constant air volume and unfortunately very inefficient. To be able to heat some rooms and cool other rooms simultaneously the ventilation systems must almost always run at full speed. This requires the terminal heating coils in the ductwork to expend the maximum amount of heat whenever the ventilation system is running. In addition because the ventilation system is required to run almost constantly when heating is required the energy required to run all the Air Handling Unit and return air fan consumes significant electricity. This type of energy inefficient ventilation system in this modern of a school building is unfortunate.

One of the issues that the building has always had is high indoor air pressure which causes the outside doors to stand open. After looking at the Testing and Balancing reports it is obvious that this does not have to be happening. The reason for the high indoor air pressure is that the return/relief air fans for the AHU's have undersized sheaves on their motor shafts and associated fan shafts. When AHU's are first started and balanced the sheaves are often required to be replaced with larger or smaller sheaves to speed up or slow down the fans. Sheaves are the wheels that the fan belts run in and making them smaller or bigger changes the speed of the fan and the associated air that it moves.

In this case it appears as though the original sheaves on the return air fans where never replaced to speed up the fans. Not changing the sheaves to accommodate more air flow for the return/relief air fans results in not enough air being relieved from the building through the relief air system. The ultimate result is that the air that the fans cannot relieve to the outside due to their sheaves being too small pressurizes the building. Again reviewing the Testing and Balancing report tells us that the return/relief air fan motors have significantly more amperage that is available as more power. This additional power would be captured by installing larger sheaves which would result in more return/relief air which would eliminate the excess positive air pressure in the building.

There are 8 Air Handling Units in the building and of these 7 have return/relief air fans. Each of the return/relief air fans would have to have their sheaves replaced to increase their air output. The replacement sheaves would cost about $700 each and the testing and balancing required making the correct size selections would cost about $400 each. The total cost would be somewhere around $8,000 to correct the building pressurization issue.

There are 25 exhaust air fans in the building providing exhaust to toiler rooms, shower rooms, kitchen, janitor's rooms and science labs. Consideration should be given to verifying that these fans are off at night and on weekends if the positive air pressure situation is taken care of. If these fans run 24 hours a day there could become a negative air pressure in the building during unoccupied hours which could cause other issues and is a waste of energy.

Air Conditioning:
Air conditioning in the building is provided by two 380 ton air cooled chillers. These chillers are relatively easy to maintain and are appropriate for the building. The chillers provide chilled water to the Air Handling Unit cooling coils which provide the air conditioned air to cool the building. Once again, unfortunately, because the air distribution systems in the building are constant volume, the chillers have to run more than they would in a variable air volume system. As far as cooling is concerned the equipment and systems have the ability to cool the building.

One issue that could be used to improve energy in the cooling system is to reduce the amount of glycol that is used in the cooling water distribution system. The original schedules indicate that 50% glycol was to be required in the cooling system. This is 15% to 18% higher than it needs to be to protect against freezing issues in the winter. A reduction in the glycol concentration from 50% to 35% would increase heat transfer energy and reduce viscosity of the liquid which would reduce pumping horsepower.

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Plumbing:
The domestic water equipment and piping is in good condition. The sanitary sewer, domestic water piping and storm sewer piping is all in good shape.

There are 10 gas fired water heaters for the building. They are split into a single unit, two groups of three and one group of 4. The different groups provide different parts of the building with hot water. They include the Kitchen, the classrooms, the showers and the dishwasher. The water heaters are in average condition.

The plumbing fixtures in the building consist of sinks, mop sinks, lavatories, urinal, toilets and electronic water coolers. The fixtures are in good condition.

Fire Protection:
The building has a complete wet fire protection sprinkler system that is in good condition. There are 5 fire protection sprinkler zones in the building.

Automatic Temperature Controls:
The automatic temperature controls in the building are electronic and in fair condition.

MBN ENGINEERING

September 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
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Subject: Electrical Condition Assessment
Moorhead Schools Master Planning (Horizon Middle School)
Moorhead, MN
MBN Project No.: 14-160

A recent walkthrough of the Horizon Middle School, part of the Moorhead School District in Moorhead, MN was conducted. The purpose of this walkthrough was to assess the present condition of the electrical and technology systems within the building. The following systems were included in the assessment:

- Lighting systems and controls
- Electrical power distribution systems
- Fire alarm system
- Class call and clock system
- Telecommunications wiring system (data network and telephone)
- Camera surveillance and security systems

Electrical Power Distribution Systems

Horizon Middle School was built in 2004 and the local power provider is Moorhead Public Service. The facility has a 2,500 ampere, 480/277 volt, 3 phase electrical service that provides power to the facility along with (2) 1000 ampere, 480/277 volt services that provide power to the two exterior air conditioning system chiller machines. The peak demand for the facility was 1,738 KVA or 2,091 amperes and it was recorded in September of 2012.

The 2,500 ampere main service switchboard is in good condition and has space available for additional distribution circuit breakers for future equipment in the facility. Lighting systems and the mechanical HVAC systems in the facility are fed at 277 volts single phase and 480 volts, 3 phase respectively. The electrical panelboards that serve the lighting systems throughout the building are in good condition with ample spare space and capacity for future modifications. The motor control centers that contain the motor starters and variable frequency drives for the HVAC system pumps, air handling units and fans are in good condition with adequate spare for future modifications. The remainder of the power distribution equipment in the facility consist of step down transformers and panelboards to

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power the branch circuit receptacles and other equipment throughout the facilities. The panelboards are in good condition with some space in most areas for additional circuits to be added for new equipment or modifications.

The facility has an emergency generator to serve the emergency egress lighting throughout the building and to power the fire alarm and emergency communications systems. The generator is rated at 50 kilowatts, 480/277 volts, 3 phase and is in good condition.

Lighting Systems and Controls

Lighting throughout most of the facility consists primarily of fluorescent recessed lighting fixtures that utilize T8 lamps and fluorescent ballasts. The light fixtures are in good condition and utilize a light source that is energy efficient. There are some areas of the facility that are using light fixtures with incandescent, compact fluorescent or HID light sources. It is recommended that these light fixtures be evaluated to see if an economical LED upgrade can be implemented to save energy over the long term.

Emergency egress and exit lighting throughout the building is connected to the emergency generator. The emergency lighting is in good condition and appears to be functioning adequately.

Exterior lighting consists of exterior building mounted light fixtures and pole mounted parking lot light fixtures. The light fixtures are in good condition and utilize HID light sources. An LED upgrade to these fixtures should also be evaluated, however an economical upgrade or replacement is more difficult to obtain.

Fire Alarm System

The fire alarm system is a Simplex 4100U analog addressable system and the facility presently has a wet pipe fire suppression system.. The system is in good condition. The system appears to have adequate coverage for the annunciation horn/strobes and the detection devices appear to be located as required by the building code.

Class Call and Clock System

The existing class call and clock system is a Rauland Telecenter ICS system. The system has paging and talk-back speakers with clocks located in all of the classrooms and in other spaces in the facility where an instructor or administrator needs to communicate with the main office. In addition, paging speakers are located in the corridors, commons, gymnasiums and other large areas to provide change of class period tones and for general announcements. The system is in good condition and appears to be working properly.

Telecommunications Wiring System

The present telecommunications wiring system consists of a main distribution room located on the first floor near the media center with several intermediate distribution closets located throughout the facility. The data network backbone cabling system is multimode fiber optic cable interconnecting the wiring closets. The analog telephone system backbone cabling system is multipair, category 3 copper cabling interconnecting the wiring closets. The backbone cabling system and wiring closets are in good condition and have space for additional connectivity.

The horizontal wiring system consists of Category 5 enhanced rated copper cables routed from the wiring closets to the individual data and telephone jacks throughout the building. The cabling is in good condition, however, the Molex jacks are failing and are not meeting Category 5 enhanced test standards for bandwidth and speed. It is recommended that the jacks are replaced on both the utilization end and the wiring closet end with the district standard jacks to meet the test standards.

In addition, the data cabling installed to the floor boxes in the cafetorium and in rooms 141 and 142 are failing due to water infiltration. It is recommended that the cabling to these devices be replaced with cable that is rated for direct buried applications.

Also, the classrooms presently are outfitted with analog tube style televisions. These displays are not compatible with modern high definition signals for instructive purposes. It is recommended that the televisions be replaced with high definition flat panel displays sized for adequate viewing in the room and that HDMI cabling be considered for interconnections to the displays.

Camera Surveillance and Security Systems

The facility presently has a digital camera surveillance system that utilizes Pelco digital cameras with a central network video recorder. The system is in good condition. In addition, the facility has a Lenel access control system to allow for card key access to certain doors throughout the building. The system is in good condition and can be expanded.

Reported by,

Michael A. Berger, P.E., LEED$_{BC\&D}$
Electrical Engineer

Facilities Assessment Summary

Moorhead High School


South, Main Entry


North student entry

Building Area:
334,385 Sq. Ft.

Building Vintage:
1966 with additions through 2004

Moorhead High School, opened in 1967, is located at 2300 South 4th Avenue. The High School is directly connected to the Moorhead Sports Center, operated by the City of Moorhead Parks and Recreation.

- Original construction 1966 – 238,800 sf
- 1991 – 5,069 sf
- 1999 – 14,750 sf
- 2004 – 75,766 sf: Commons and 9th Grade Center
- Adjacent Sports Center houses the Fine Arts and Outreach in leased space.

Total building area is 334,385 sf

The Moorhead Sports Center was built in two periods completed in 1999 with a total of 23,473 sf.

High School enrollment is 1,565 (2012 data) with students in grades 9-12.

The building is two levels except the original academic wing on the west and 2004 addition which are three levels. Mechanical penthouses are above the upper floor.

The original building has one academic wing organized around three double loaded corridors with some spaces not on exterior walls. An east/west corridor is continuous through the building as well as a north/south corridor connecting the main entries. West of the entry corridor are the majority of instructional spaces including a ninth grade center 2004 addition. Between the ninth grade center and the original auditorium is the 2004 student commons which is used for cafeteria and multipurpose functions.

On the east side of the main entry corridor is a three station gym and auditorium; the next spaces to the east are the Music suite and swimming pool directly adjacent to the Gym. Support spaces are located around the specialty instructional areas. On the furthest east side is the Moorhead Sports Center.

West of the academic wing is a one story workforce/industrial technology spaces consisting of auto, welding/small engine and wood working. An interior room in this group supports electronics and prototyping design lab.

Corridor width is generous except the north parking lot entry hallway. The form does not lend well to breakout spaces, so these functions generally occur in multi-use rooms with a few exceptions. The only space large enough for all school gatherings is the original gym or the Field House.

The first level of the 3-story portions of the building is a half story in the ground. Groups of stairs make the transition for offset floors and the lower level. The first floor has instructional classrooms,

Facilities Assessment Summary

Moorhead High School

Learning/Research portion of the Media Center (2 stories connected internally), Special Education, Locker Rooms for the Pool and Gym and specialist offices.

Entry

Entries occur on the south and north sides and are functionally split for visitors and administration on the south with the largest parking on the north where students enter. Both sides are fully accessible. On the north the accessible entrance is on the Far East side so people must travel several hundred feet to the administration area. The primary student entry hall is only 10 feet wide that leads to a half flight of stairs leading up to the main entrance hall. Primary visitor parking is on the south with an exterior ramp to bring visitors up to main floor level.

The north, main public entrance is a classic 1960s architecture leading into a 2-story high ceiling formal entry hall. Monumental murals are located on the upper walls. The floor is terrazzo with benches along the sides. This space is large enough for large gatherings. Two balconies project from the upper level corridors on the west side of the hall. The original Gym is on the east side of entry hall with a wall of trophy display cases.


Entry Hall – looking south


North student entry corridor –south view

Classrooms

1966 classrooms are approximately 950 square feet. They are adequate in size but finishes are past their anticipated lifespan. Furnishings and fixtures do not support collaborative learning settings and do not take advantage of best practices of flexible groupings. Classrooms are rectangles and furniture is tightly organized.

Staff have collaborative spaces at the center of a grouping of six classrooms. Staff rooms are only accessed through the classrooms so are not directly connected to the corridor leading to weak connections for instruction spaces located on the exterior walls. Staff common spaces function as teacher offices.

Cabinets from the original construction are appropriate for storage. Cabinet installations have a few areas for repair. Student and teacher furniture is well maintained but varies in age and adaptability, with student pair desks in most classrooms. Digital projectors are present in most instruction rooms.

The Ninth Grade Center addition has instructional rooms organized around a large team resource space combined with locker commons. All three floors connect with stairs on the perimeter so the ninth grade sections can operate internal to the wing. Each floor level has three classrooms and a large science room.

APPENDIX
FACILITY ASSESSMENT - MOORHEAD HIGH SCHOOL

Facilities Assessment Summary


Ninth Grade Center Locker/Resource


9th Grade Classroom – First Level

A water main break occurred in the past with some lasting affects in the academic wing First Floor and stairs. The structure is reported to be stable but settlement is evident in cracks occurring in the exterior walls. The original design had windows very high on First Floor walls. The south side classrooms were remodeled with window wells proving better light access.

Special Education and Facilities

Special Education occupies spaces in several parts of the building. In the academic wing they are centrally located, on main circulation paths. The spaces are generally sized appropriately and some have a main room and smaller breakout spaces. The room furnishings are well maintained and offer a variety of environments to meet individual needs. Staff are housed within teaching spaces. Spaces are located in portions of the building.

Specialty Classrooms

Art is located on the second floor of the Sports Center with two primary studio spaces. It is remote from other academic program spaces. Daylight is minimal for fine arts instruction. The spaces are undersized for the variety of equipment and instruction provided. Pottery is half or less the size needed and the kiln space is cramped. Storage is undersized and limited by the surrounding room uses. The separation in the building does not promote synergy between spaces. The ceramics space has several kilns and minimal ventilated storage. Electronic media lab is a narrow linear space with too few workstations. This room must also support storage. Each space needs to be upgraded to provide an environment suitable for arts students.


Arts studio - looking north


Potting wheels with kiln room beyond

Music is located on the north side of the Main Floor in a suite of band, orchestra, vocal, practice rooms and storage. The room sizes are on the low side for Minnesota state guidelines but are well suited to their uses with acoustical treatment and room height. Storage is adjacent and adequate for the orchestra instruments. The older music areas from 1966 have smaller support spaces. They are

Facilities Assessment Summary

located such that travel to the new orchestra area is through the choral and band spaces or out and around the main building corridor.


Music- remodeled ceiling


Addition for Orchestra

Auditorium space is divided with a main level and the upper sloped seating that can be separated for study uses. The auditorium is original construction with 536 seats. Finishes and equipment are due for updates. Stage area is adequate but the scene shop and supporting spaces are undersized. No formal space in the building will hold the entire student population.


Lower auditorium – stage on left


Lower auditorium - parterre

Media Center spaces were remodeled and are in excellent condition. The spaces are central in the academic wing directly east of the administration office. The computer lab is located on the First Floor in a remodeled space. The network data center is located in an adjacent space with separate cooling.


Media center – Main level


Computer lab

Science Labs, located on the Third Level, vary in their age and condition. The rooms are adequate in size. Many rooms have original science casework and fixtures. These are beyond their usual life and

Facilities Assessment Summary

should be replaced. Other lab finishes should be replaced at the same time. A few labs have vinyl flooring that may be vinyl asbestos tile. Finishes are ready for replacement in most labs. These spaces have aged well with quality maintenance but do not support current best practices.

One lab was remodeled since 2000 and is in fine condition. This space and some older labs have updated fume hoods.


Original lab casework


Remodeled lab

Specialized Programs include Robotics, AST certified Auto, welding and Woodworking. They are located on grade on the west side of the original building. Spaces are in good condition and well maintained. The rooms are adequate in size with limitations for storage.

Gymnasium

Gymnasium space in the 1966 section has a full competition basketball court. Cross-court basketball standards are retractable for three teaching stations. Cross courts are separated with roll up athletic curtains. There are also folding wall partitions in pockets. Both north and south sides have retractable bleacher systems. Gym flooring is wood and perimeter walls are concrete masonry. The ceiling is exposed concrete structural 'T' sections. Acoustics are a problem with mostly hard surfaces and parallel walls.

Some masonry cracks have occurred on the south wall of the main gym. They should be corrected but do not have a safety concern. The structural report gives additional information.

Main gym – bleachers


Main Gym

Locker rooms are located on the floor below the gym so movement between spaces is not direct, rather through a stair leading to the corridor between the gym and the pool.

Facilities Assessment Summary

Field House

The field house addition was constructed in 1999 and includes support spaces. A four lane track surrounds three basketball stations. The flooring is synthetic athletic sheet with welded seams. Cross courts are separated with roll up athletic curtains. A narrow band of windows provides some daylight on the south wall but not adequate for most program use. Walls are concrete masonry with an exposed steel truss structure above. Gymnasium equipment and sound system are in very good condition. Acoustics are a problem with mostly hard surfaces and parallel walls. Mechanical equipment is mounted on mezzanines in the corners adding to the background noise.


Field House – looking south


Training Room

A public entry courtyard extends north of the field house to the large parking lot. It is generously sized and landscaped. Public entry is into a large vestibule that acts as a security point into the main school building. Access can be separated for the school, field house and Sports Center individually.

Adjacent to the field house, on the north side of the pool is the athletic training suite. The suite is entered directly from the main east/west corridor. The size is adequate and has new equipment with well-maintained finishes. Sanford Orthopedics Sports Medicine operates the facility.

Competition locker rooms are located on the furthest east side of the Sports center. They are undersized and have inadequate storage for equipment. Fields are accessed by crossing a service drive before reaching fields or the stadium. Finishes are past due for replacement and shower facilities are too few.


Competition Locker room in Sports Center


Training Room

Pool

Pool spaces are in good condition with limited capacity for spectator seating. The area was remodeled in 2004. Locker rooms were not upgraded and need substantial remodeling. They are located one level below the pool deck. Lockers have some facilities for accessibility although connections to the pool are one level above and would require use of a somewhat remote elevator.

APPENDIX
FACILITY ASSESSMENT - MOORHEAD HIGH SCHOOL

Facilities Assessment Summary


Pool


Locker room

Instructional Support and Flexibility/Adaptability

The building core has few support spaces except the staff break room and coordinating offices. Small group space is generally not available with a few exceptions. Generally there are not enough spaces to support individualized/differentiated learning.

The building lacks variety in small and medium breakout spaces for instructional use. The Ninth Grade Center is the exception. Classrooms occupy most of the academic building area and a number are needed to support the student population. This leaves little space for break-out instruction as well as student casual learning.

Flexibility could be increased with common areas created within classroom groupings, for smaller and larger groups and with transitional furnishings.

Staff Spaces

In the 1966 west wing staff collaborative spaces are located at the center of a grouping of six classrooms, although it is only accessed through the classrooms so are not directly connected for instruction spaces located on the exterior walls.

Administration

Reception and administration offices are located from the main Entry Hall. The office is open with ample glazing but does not have a direct view from staff positions to the public vestibule. Attendance office is adjacent to the main vestibule but not directly connected to the Administration suite.

Food Service

Kitchen and serving spaces are in the 1966 west wing. Cafeteria function takes place in the Student Commons addition. Student commons finishes are in excellent condition. The serving is in three shifts. Commons seating capacity is 300 and is inadequate for the student population.

The kitchen occupies the original footprint. Some equipment is outdated and the workflow does not meet current food service standards. As offerings have grown, serving includes a space across the common building corridor to support two serving lines. Resupplying the remote serving space is challenging with student movement in and out of the cafeteria.

Updated kitchen equipment and remodeling for improved workflow is currently needed.

Building Services / Storage

Facilities Assessment Summary

Building Services / Storage

The delivery dock and trash are on the north side of the building in a segregated loading dock area accessed from the main parking lot. Trash and recycling at the dock are directly west of the student entry from the parking lot. There is little separation for cars and deliveries.

Custodial areas are located throughout the building but are barely adequate in size. The dock lacks an adequate receiving space so materials arriving must compete with a large volume of food products as they arrive. The dock, trash and recycling are adjacent to the main student entrance.

Building-wide storage is too little and not dispersed.

Security/Safety

The main office is located near the visitor entry but entry doors cannot be seen from staff workstation positions. Relocating the office directly adjacent to the public entry and providing a through office entrance control would be an improvement. Visibility down corridors is good only for limited distances before a turn. Staff spaces are not adjacent to corridors so they cannot provide passive observation. Operationally the school uses three roving staff to assist with observation. Some cameras are installed for security monitoring. The building has numerous exterior doors to meet exiting requirements under the building code. These are a challenge particularly when students prop them open to re-enter through otherwise secured doors. The interior does not have the capability of securing portions of the building except at the Sports Center. Creating area secure points with cross-corridors may be considered for this purpose.

Site / Outdoor Learning and Activity

Outdoor learning spaces are not developed on the building site. Game fields are across the parking lot or service drive so they must be crossed by students. Landscape areas around the building could be utilized for outdoor learning spaces.

Site / Circulation / Safety

Parking for visitors is on the south at the Main entry. Students and staff park in the largest north lot. The parking capacity is reported to be adequate for the demand. The majority of students arrive by car and enter on the north side of the building through a pair of doors. This entry is undersized.

The paved north side also serves as the loading area from the parking lot drive lane. Trash and service loading is on the same parking lot as cars. Maintenance and deliveries should be clearly separated from student areas.


West Entry- primary student entry


Loading Dock and trash enclosure

Facilities Assessment Summary

Moorhead High School

Exterior Envelope

The original construction is a steel structure with exterior precast concrete on the 1966 west portion of the building. Brick infills are between the precast fins and a continuous precast concrete panel surrounds the top. Windows are narrow vertical openings between the fins of the concrete wall panels. Exterior sealant joints between precast concrete wall panels are generally past their service life and are ready for replacement. Sealant around windows are also in the replacement category.

Water main damage and subsequent settlement have caused cracks in the lower left corner of horizontal precast concrete panels, at the top of the wall. Refer to the structural report for additional information.

Brick covers exterior sides of the one story west structure and the additions. The 1966 masonry construction has a minimal wall cavity so the insulation value is low by current energy standards. Later additions improve in the thermal envelope and are in good condition.

West addition and loading

1966 south elevation

North addition entry to Commons

Field House Addition

The Commons addition has an entry stair and terraced patio. This entry is available to students at other times but is not highly used and is not accessible. The terraces have settled substantially and should be repaired.

Windows

The original building windows are tall and narrow with weak access for daylight. The windows are single glazed, and past their time for replacement. Perimeter classrooms have daylight access through the narrow windows but approximately half the academic wing are internal and have no daylight or views. 1966 windows are single glazed so are ready for replacement with more energy efficiency.

Facilities Assessment Summary

Moorhead High School

Windows in later additions have insulated glass in aluminum frames. Addition windows are good quality and size. Several spaces could benefit from more daylight and should be considered for future improvements.

Roof Assembly

The majority of the building has built-up-bituminous roof systems that match the age of the construction so they are 20 years or older. The roof system is near the end of its calculated lifespan. Dark areas on the roof indicate areas with low spots that retain water. At the time of reroofing, insulation values and proper slope to drain should be corrected. A thorough review by a roof specialist may determine its actual remaining life expectancy.

The 2004 addition has a ballast-held single ply EPDM roof. The condition is good for a 10 year old installation. The expected replacement will be in approximately 10 years.

2004 Addition

Academic wing roof

Interior Finishes

Original corridor floor is composed of terrazzo in the main entry and major east/west corridors. Classroom wings have resilient tile and secondary spaces have vinyl tile that is generally in good condition. Some common areas with resilient tile have edges of the tile separating or have been installed bridging a joint. These areas need corrections. The Second Floor has some rooms with vinyl asbestos tile (VAT) and an elevator lobby.

Classrooms have carpet flooring. There is broadloom carpet in older spaces and carpet tile in the 2004 addition and remodeling. Broadloom carpet is near the end of its life and ready for replacement.

Acoustical tile and grid ceilings are in good condition in areas of additions and remodeling. Other areas are substantially overdue for replacement, including many academic wing spaces. These areas of ceiling tile have slightly sagging panels, some cracked or missing corners.

Wall materials are concrete block, brick or gypsum board that are in good condition. Corridors have a high-build paint that needs touch-up in a few locations.

Casework in areas not recently remodeled needs replacement. Condition varies from serviceable to poor with veneers in need of repair and outdated plumbing fixtures.

Restrooms throughout the building are generally accessible with a few exceptions. Accommodations have been made with upgrades to stall sizes and lavatories.

Facilities Assessment Summary

Moorhead High School


Academic Wing corridor


Secondary corridor


Entry Commons looking south


Entry Commons looking north

MBN ENGINEERING

August 28, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Civil Narrative
Moorhead Schools Master Planning (Moorhead High School)
Moorhead, MN
MBN Project No.: 14-160

Dear Steve:

This letter is a follow up from our site visit on August 28, 2014. The purpose of the visit was to familiarize ourselves to the existing facilities in order to assist with the master planning phase; also we performed a visual assessment review of the existing facility.

We will breakdown our summary based on the civil design components associated with the Moorhead High School.

Parking Lots/ Athletic Facilities

Football Stadium
Asphalt path to home grandstands is in need of a mill and overlay. I would recommend this in two to three (2-3) years. The fence around the football field is in need of replacement in the next 10 years. Some items observed for the fencing are bent top rails and fence posts, corner posts pushed out of ground, and fabric that has been patched in multiple spots. There are also many instances where the asphalt pavement has moved around home bleachers. These spots are a potential tripping hazard and should be fixed in the next couple years.

North Parking Lot
There is great drainage throughout the parking lot. Many curbs are in need of repair. Snow removal equipment is the main culprit. These should be replaced in the next couple of years. Sidewalk on the perimeter have signs of differential movement are in need of replacement in the next couple years. I also recommend a mill and overlay of existing asphalt parking lot in the next five (5) years. The sidewalks around the building are in good condition. The asphalt near door #4 and dumpsters is in need of repair. I would recommend a mill and overlay in the next two (2) years. There is also good drainage away from building. There are two (2) gate valves north of NW corner of Moorhead Sports Center that are in need of a concrete collar. They also need to be brought up to grade. This is also done due to the fact that compaction of asphalt around castings tends to be lacking and

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infiltration around the casting is common. North parking lot and access road around the Moorhead Sports Center have good drainage. The sidewalks and curbs are in good condition. I would recommend a seal coat within the next two (2) years.

East Parking Lot
The curbs and sidewalks are in good condition and the drainage is good. There are also more signs of cracking in the parking lot. I would recommend a mill and overlay in the next five (5) years. The inlet in middle of parking lot has raised and needs to be lowered; also a concrete collar should be installed. This should be repaired to ensure water doesn't pond and damage the asphalt pavement in the next year. This is also done due to the fact that compaction of asphalt around castings tends to be lacking and infiltration around the casting is common.

Tennis Courts
Drainage issues on south side of court #7. The low spot should be patched and all the tennis courts should be resurfaced in the next couple years. There are also some areas where balls can get under fence. I would recommend adding additional fence to eliminate the problem.

Baseball Field/Softball
On the baseball field, they possibly could extend a 6' high chain link fence along the 1st base and 3rd base lines. This would be done to avoid and injuries to spectators. Overall the baseball and softball fields are in very good condition, and have good drainage.

South Parking Lot
There is good drainage away from building. Area around door #4 appears to not drain, I would recommend installing inlet to facilitate drainage in the next couple years. North side of the parking lot, the curb and sidewalks are in poor condition. I would recommend replacement in the next two (2) years. The remainder of the curbs and sidewalks are in good condition. There are a couple cracks that extend the entire width of lot. I recommend full depth replacement of cracks and a chip seal of the parking lot in the next two (2) years.

West Parking Lot/Bus Drop-off
There is good drainage in the parking lot. The curbs are in good condition with most of the sidewalks in good condition and a few are in adequate condition. I would recommend a mill and overlay in next two (2) years for the parking area. The drainage is also good in the bus drop-off area. The curbs and sidewalks are in good condition and the pavement is in adequate condition. A concrete collar should be installed around the inlet on north side of the island. This is done due to the fact that compaction of asphalt around castings tends to be lacking and infiltration around the casting is common. I would recommend that the bus drop-off has a chip seal in the next two (2) years. Electrical pull box in west sidewalk needs to be raised to grade and concrete should be filled in around it. This is a potential tripping hazard and should be done in the next year. A concrete collar should be installed around the manhole cover on west side of island. This is done due to the fact that compaction of asphalt around castings tends to be lacking and infiltration around the casting is common.

Utilities

All pertinent public service utilities (sewer and water) appear to be readily available from 2nd Ave S, 4th Ave S, Rensvold Blvd, & 22nd St S. Utility services are currently in place and the storm sewer appears to be functioning at the current locations.

Erosion Control

For all projects, erosion and sedimentation control is required to prevent sediment transport downstream or off-site. Additionally, projects that are one acre or more in disturbance will be required to follow the guidelines of the Storm Water Pollution Prevention Plan and obtain the National Pollution Discharge Elimination System (NPDES) permit as regulated by the Minnesota Pollution Control Agency (MPCA). Erosion and sedimentation control measures include, but are not limited to, silt fence, inlet protection devices, rock construction exits, and temporary seeding.

Miscellaneous

Items that were not verified, but may be requisite with a building addition include:
1. Verification of parking required compared with provided.
2. ADA compliance of any disturbed area that serves as an ADA route.
3. Impervious coverage allowable compared to total impervious existing and proposed.
4. Size of storm water management suitable to meet requirements.

Summary

The purpose of our site visit was to provide a site conditions visual inspection assessment. As mentioned, our recommendations are primarily maintenance based with four (4) parking lots and athletic facilities requiring more immediate improvements.

If you have any questions, please contact me at 701-478-6336.

Sincerely,

Joshua M. Magelky, P.E.
Civil Engineer

sk

APPENDIX
FACILITY ASSESSMENT - MOORHEAD HIGH SCHOOL

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September 26th, 2014

Cunningham Group
Attn: Steve Albertson, AIA
201 Main Street SE, Suite 325
Minneapolis, MN 55414

RE: Moorhead Area Public Schools (MAPS) Master Planning
Facilities Condition Assessment – Moorhead High School
104.0001

Mr. Albertson:

As requested, Heyer Engineering (Heyer) conducted a visual walkthrough and observation of Moorhead High School, one of Moorhead Area Publics Schools' district wide facilities. The observation took place on August 26, 2014. The purpose of the walkthrough was to observe the condition of the structure and preliminarily assess the building's condition from a structural standpoint to aide with MAPS master planning efforts. The level of assessment performed was not comprehensive in nature in that it was solely a visual assessment of easily accessible areas. Since many of the walls are covered by finishes, wall panels, or earth, our walkthrough and observation was limited visual signs of defects such as cracks, sloping floors, and surface deterioration of materials. Heyer had limited access to the roof, so most observations were made from inside or from ground level on the exterior.

Existing Structure:

The existing building is a two story school facility with a basement, approximately 316,000 SF, originally built in 1967. Many additions to the original structure have been over the years, with the major additions of the Fieldhouse and 9th grade center in 2003. Most of the building's original construction documents were not available for review, but the 2003 documents were. The original building's structure was largely covered by finishes and unable to be observed. The original building's structure is likely concrete structural slab poured over structural steel framing. Columns are likely to be structural steel. It is our understanding that the entire original school structure is founded up on a mat slab that is 2'-6" think. Exterior walls are almost entirely clad with a brick veneer, with limited areas of precast concrete and glazing. It is assumed that the wall are backed up by a CMU or other concrete type construction. The gymnasium is framed by steel trusses supported by steel beams and columns. Stack bond masonry infill is used for the walls in between steel columns. The 9th Grade center addition roof is framed by steel joists and steel decking, supported by structural steel beams and columns. The 2nd and 3rd floors are framed with 8" precast concrete hollow core planks supported by structural steel beams and columns. The 9th grade center addition is founded by concrete foundations walls spread footings. Exterior walls is likely a steel stud cavity wall with a brick veneer and area of glazing. The field house addition and event entry is framed by steel joists/steel beams and metal decking supported by structural steel beams and columns.

Wall of the field house itself are comprised of load bearing CMU. In all areas of the building a concrete slab on grade is utilized as the 1st floor structure.

Visual Observations:

Upon commencing an observation of the interior of the building, in general the building appeared to be in good condition. In the original building most of the structure was covered by finishes, so much of the structure was unable to be observed. However from visual observations a few areas of note were observed.

- At the stairwell on the south side of the original structure adjacent to the main entry, cracks were observed in the stair well in the CMU stack bonded block. It is our understanding that the cracking observed in the storage room beneath the stair has been present for many years. New tile finishes were applied to the stair well during the 2003 remodel. Since that remodel a crack in the corner of the tile has formed. Heyer would attribute the crack to possibly one or more factors including some slight settlement, thermal or moisture driven expansion. Adjacent to the stair well in other classrooms on 1st floor along the south exterior wall, a number of diagonal, settlement type crack were observed in what are assumed to be non-bearing walls covered by plaster. Given the mat foundation of the original structure, large settlements do not seem to be possible. It is Heyer's opinion that the cracks are not a structural concern but should be monitored. To ascertain a definitive cause of the cracking may be difficult due to the buried nature of the foundation system and the unknown condition of the footings and soils beneath the structure in this area.

- Some floor cracks within the slab on grade were observed in the basement of the original structure, near the hallway entrance to the 9th grade center. While the slab cracks would be consistent with the age of the building, it appears some recent movement has occurred. It is likely this movement could be attributed some slight settlement of the 2003 addition structure. Cracks in the slab on grade are not a structural problem but may represent an aesthetic or serviceability concern.

- Due to the area under the pool being filled almost in its entirety with mechanical equipment/ductwork, limited observation of the underside of the pool deck was possible. However, one accessible spot of the deck in the southeast corner, when viewed from underneath, did exhibit signs of water as the form deck was rusted and corroded. This area also coincided with an area of cracking noted by building staff in the tile. Heyer did not observe any slab deflections that would indicate a structural issue, but the slab and the amount of corrosion on the underside of the slab should be monitored.

- In the upper floors of the 9th grade center, floor cracks were observed in the VCT of a science room and the tile of the bathrooms. Although noticeable, the cracks were relative minor in nature and can likely be attributed to being located along a structural beam line, floor control joint, or some slight settling of the structure. A floor slope was also observed in some classrooms in the slab on grade on 1st level. The floor slab is likely experiencing elevation fluctuations due to the soils beneath in combination with some settling of the structure. The floor slope and cracking in their self are not a structural concern at this time, but may present some aesthetic or serviceability issues.

- Relatively minor cracking in the CMU/clay tile was observed in the gym area, both in the infill walls above the main floor and in the walls of the boy's locker room. The cracks did not seem to be major

and were likely in non-load bearing walls. Continued monitoring is recommended and repair during any future remodeling or other construction project.

- On the exterior of the building at the terrace type structure on the north side of the 9th grade center, major settlement of the slab on grade was observed. The concrete retaining walls appeared to be in good condition, plumb, and in their original position. It is likely the soil used for backfill was not compacted thoroughly, has settled, or become desiccated due to the tree and its roots located in the area. This settlement does not present a structural concern at this time, but it is a maintenance issue.

- A slope in the east-west main floor corridor from the food service area to roughly the pool area was observed. The corridor exhibits a noticeable slope down toward the north over its length. Heyer saw no structural distress when viewing the corridor slab and is unable to determine the cause of the slope. Continued monitoring is recommended. More information and observation would be needed to make a determination of the cause of the slope, but it is unlikely that there are any structural issues with the slab itself.

- Upon walking the exterior of the structure, the overall condition of the building (brick veneer and glazing) appeared to be good.

Summary:

Overall, Moorhead High School appears to be structurally sound and in good condition. The building has been well maintained over its lifespan. Many issues noted above may be related to subsurface issues related to settling of the new addition structures. Heyer recommends continued periodic monitoring of the floor wall cracks and if significant future additional movements are observed, it could be and indicator some sort of latent conditions at work. It is also recommended to address areas noted as future remodeling or other construction projects are undertaken.

If you have any further questions or comments, please contact us.

Sincerely,

HEYER ENGINEERING, PC

Eric A. Greiff, PE
Sr. Project Engineer

ONE

OBERMILLER NELSON
ENGINEERING

MECHANICAL EVALUATION – HIGH SCHOOL

Date	October 2014
Project #	2014172
Project Name	Moorhead Schools Masterplan
Project Location	Moorhead, MN
Description	Evaluate HVAC Systems at the High School

Mechanical Overview:
Predominantly the mechanical systems and equipment in the building were installed when the building was new in 1966. Over time there has been some equipment replacement and remodeling and additions. The most significant remodeling and addition happened in 2002. With the original construction being dated in 1966 the age of the majority of the mechanical equipment and systems is 48 years old.

Heating System:
The building is heated through two 350 HP natural gas fired low pressure steam boilers. The boilers can also run on fuel oil which allows the school to take advantage of interruptible natural gas rates which are about 20% lower than firm gas rates.

The steam from the boilers is predominantly used directly in Air Handling Unit Heating Coils, two large heat exchangers in the boiler room, domestic water heaters, and a few miscellaneous heating devices and other smaller heat exchangers.

The steam feeds hot water heat exchangers that heat how water that feeds a heating distribution loop that feeds the entire original building. The hot water heating system feeds hot water baseboard radiation that is installed along the outside wall of all the exterior rooms in the building.

The steam boilers are beyond their useful life as is the entire steam distribution system. The steam boilers should be replaced with new high efficiency hot water boilers. The steam distribution system should be replaced with a hot water heating distribution system. The steam coils in AHU's should be replaced with hot water coils. The steam domestic water heaters for the laundry, pool, kitchen and general hand washing should be replaced with high efficiency gas fired water heaters.

Ventilation System:
The buildings ventilation systems are diverse due to numerous additions and remodeling projects that have been done over the years. As would be expected the older ventilation systems (48 years old) are in poor condition and inefficient. The newer systems installed in the last significant addition in 2002 are in good condition and energy efficient.

The ventilation system for the original school is called a dual duct system. The system is distinguished by the use of two ducts routed side by side. One supply air duct has warm air in it and the other duct has cold air in it. The warm and cold air quantities are varied to provide more cooling or heating depending upon the space thermostat requirements. This type of ventilation system is constant volume and very

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energy inefficient. The dual duct ventilation systems should be replaced with a variable air volume system using VAV units with terminal heating coils. The dual ducts could be left in place and reused. AHU's would need to be replaced and VAV boxes would be added where the dual duct boxes are now located.

The other AHU's that remain from the original 1966 construction include the Auditorium, Stage, Gymnasium, Music, Pool and Locker Rooms. All of these AHU's are original (48 years old) and should be replaced with new units with hot water heating coils, chilled water cooling coils, variable speed drives and new automatic temperature controls.

The AHU's and ventilation systems installed in the 2003 addition and remodeling where variable air volume hot water, chilled water units that are in good condition. The units use variable frequency drives to modulate air flow and are energy efficient.

Air Conditioning:
Air conditioning in the building is provided by the 535 ton water cooled chiller. The chiller tubes and main body was new in 1996. The body of the chiller was oversized to handle future expansions at the high school. Future expansion happened in 2003 and the chiller compressor was increased in size to the 535 tons. In addition in 2003 the cooling tower was replaced to accommodate the larger compressor. Therefore the chiller is 18 years old with the compressor and cooling tower being 11 years old. The entire piece of equipment is in good condition and should last another 10 to 20 years.

Plumbing:
The domestic water equipment and piping is in fair condition for their age. Plumbing fixtures have been replaced as needed. There are two issues with the plumbing in the building, the water heaters and the domestic hot water piping.

The water heaters are all heated with steam requiring the very large steam boilers to be fired in the summer just to heat the domestic water. The water heaters should be replaced with high efficiency gas fired water heaters.

The water source in Moorhead is a combination of well water and river water. The water is very hard meaning it has a significant amount of minerals. Domestic hot water is susceptible to calcium buildup over time because the calcium comes out of solution when the water is heated. Therefore there is significant buildup of minerals in the piping system. Consideration should be given to cutting out some sample sections of piping to determine how much the piping is plugged.

Fire Protection:
The building has a complete wet fire protection sprinkler system that is in good condition.

Automatic Temperature Controls:
The automatic temperature controls in the building are electronic. The controls from the 2003 addition are in good shape. The controls in the original school were upgraded to electronic controls in the late 1980's and are in poor condition. The older controls should be replaced with new modern web based controls to improve efficiency and accessibility to the control system from anywhere.

MBN ENGINEERING

September 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Electrical Condition Assessment
Moorhead Schools Master Planning (Moorhead High School)
Moorhead, MN
MBN Project No.: 14-160

A recent walkthrough of the Moorhead High School, part of the Moorhead School District in Moorhead, MN was conducted. The purpose of this walkthrough was to assess the present condition of the electrical and technology systems within the building. The following systems were included in the assessment:

- Lighting systems and controls
- Electrical power distribution systems
- Fire alarm system
- Class call and clock system
- Telecommunications wiring system (data network and telephone)
- Camera surveillance and security systems

Electrical Power Distribution Systems

Moorhead High School was built in 1967 and was remodeled and expanded in 2004. The local power provider is Moorhead Public Service. The facility has a 4,000 ampere, 480/277 volt, 3 phase electrical service with 2,500 ampere and 1,200 ampere main breakers that provide power to the entire facility. The peak demand for the facility was 1145 KVA or 1,377 amperes and it was recorded in October of 2008.

The 4,000 ampere main service switchboard and the downstream distribution switchboards are in good condition and have space available for additional distribution circuit breakers for future equipment in the facility. Most of the lighting systems and the mechanical HVAC systems in the facility are fed at 277 volts single phase and 480 volts, 3 phase respectively. The electrical panelboards that serve the lighting systems throughout the building are in good condition with ample spare space and capacity for future modifications. The motor control centers that contain the motor starters and variable frequency drives for the HVAC system pumps, air handling units and fans are in good condition with adequate spare for future modifications. The remainder of the power distribution equipment in the facility

consists of step down transformers and panelboards to power the branch circuit receptacles, some of the lighting systems, and other equipment throughout the facility. Most of the panelboards are in good condition with some space in most areas for additional circuits to be added for new equipment or modifications. There are a few panelboards in the facility that remain from the original 1967 construction. All of those original panelboards should be upgraded as they are past their rated service life.

The facility has an emergency generator to serve the emergency egress lighting throughout the building, the building heating system, the server room and the fire alarm and emergency communications systems. The generator is rated at 300 kilowatts, 480/277 volts, 3 phase, it is located in an exterior self-contained enclosure and is in good condition.

Lighting Systems and Controls

Lighting throughout most of the facility consists primarily of fluorescent recessed lighting fixtures that utilize T8 lamps and fluorescent ballasts. The light fixtures are in good condition and utilize a light source that is energy efficient.

Emergency egress and exit lighting throughout the building is connected to the emergency generator. The emergency lighting is in good condition and appears to be functioning adequately.

Exterior lighting consists of exterior building mounted light fixtures and pole mounted parking lot light fixtures. The light fixtures are in good condition and utilize HID light sources. An LED upgrade to these fixtures should also be evaluated, however an economical upgrade or replacement is more difficult to obtain.

Fire Alarm System

The fire alarm system is a Simplex 4010 analog addressable system and the facility presently has a wet pipe fire suppression system.. The fire alarm system is in good condition. The system appears to have adequate coverage for the annunciation horn/strobes and the detection devices appear to be located as required by the building code.

Class Call and Clock System

The existing class call and clock system is a Rauland Telecenter ICS system. The system has paging and talk-back speakers with clocks located in all of the classrooms and in other spaces in the facility where an instructor or administrator needs to communicate with the main office. In addition, paging speakers are located in the corridors, commons, gymnasiums and other large areas to provide change of class period tones and for general announcements. The system is in good condition and appears to be working properly.

Telecommunications Wiring System

The present telecommunications wiring system consists of a main distribution room located on the first floor near the media center with several intermediate distribution closets located throughout the facility. The data network backbone cabling system is multimode fiber optic cable interconnecting the wiring closets. The analog telephone system backbone cabling system is multipair, category 3 copper cabling interconnecting the wiring closets. The backbone cabling system and wiring closets are in good condition and have space for additional connectivity.

The horizontal wiring system consists of Category 5 enhanced rated copper cables routed from the wiring closets to the individual data and telephone jacks throughout the building. The cabling and termination jacks are in good condition and functioning properly.

Also, the classrooms presently are outfitted with analog tube style televisions. These displays are not compatible with modern high definition signals for instructive purposes. It is recommended that the televisions be replaced with high definition flat panel displays sized for adequate viewing in the room and that HDMI cabling be considered for interconnections to the displays.

Camera Surveillance and Security Systems

The facility presently has a digital camera surveillance system that utilizes Pelco digital cameras with a central network video recorder. The system is in good condition. In addition, the facility has a Lenel access control system to allow for card key access to certain doors throughout the building. The system is in good condition and can be expanded.

Reported by,

Michael A. Berger, P.E., LEED$_{BC\&D}$
Electrical Engineer

Facilities Assessment Summary

Probstfield Center For Education

Probstfield Center for Education


District administration entry


District administration wing

Building Area:
93,185 Sq. Ft.

Building Vintage:
1965 with additions through 2014

Probstfield Center for Education is located at 2410 South 14th Street. The building serves the District administrative offices and Pre-K / Kindergarten programs. The academic building supports instructional space, media center, administration and two gymnasiums.

- Original construction 1966 - 46,013 sf
- Elementary addition 1970 - 14,807 sf
- Kindergarten addition 1993 - 9,310 sf
- 1999 Interior Remodeling
- Entry addition and remodeling 2003 - 663 sf
- Gymnasium and instruction space addition, approximately 2014 - 22,392 sf.
- Total building area, including the addition under construction is 93,185 sf

Probstfield Elementary school is located within Probstfield Center for Education. There are approximately 200 students in the Kindergarten program with an expansion for the fall of 2015. In addition to Pre-K and Kindergarten, current programs in the building include Community Education, Jump Start, Early Childhood Family Education and Early Childhood Special Education.

The building is one level except three mechanical rooms above main level roof. Height above the ceiling within the original construction is very low, limiting ability to retrofit with ducted mechanical systems. A gymnasium and classroom addition was under construction during the summer of 2014, located on the southeast side of the existing building. Portions of the original building, comprising about 1/3rd of the total building area, do not have fire sprinklers. Newer areas have sprinkler coverage.

The original building has two academic wings organized around an inner circular space with multiple rooms. A square corridor surrounds the center circle room forming wide areas at the corners. The corridor has lockers on all classroom sides. The corridor space is generous in width but the form does not lend itself to breakout spaces or other common uses. The organization makes visible observation by staff difficult.

The north academic wing houses Pre-K and Preschool functions. One corner suite is Community Education Administration with two inner offices and a large room with cubicles. These administrative spaces are crowded with little room for storage.

Facilities Assessment Summary

Probstfield Center For Education

The south academic wing houses the Kindergarten Program. Four kindergartens on the west side of the wing have a new corridor connecting to the addition under construction. The arrangement will limit daylight to what is available through the hall from new exterior windows. The circular center spaces have no access to daylight.

Entry

Entries occur on the west and east sides; they are functionally split for District administration and school. District Administration utilizes the northwest entry in a recent addition. The west entry is fully accessible utilizing an exterior ramp to bring visitors up to main floor level. Minor rust is occurring on entry canopy steel and steel handrails where they meet concrete surfaces. Corrections are cosmetic and considered for maintenance.

Student and public entry for the PreK and elementary is on the east side of the school connected to the parking lot. The entry has a minimal presence and no direct supervision by office staff. Once inside the vestibule there is a right turn to a short corridor leading to the school reception office. This entry serves parent drop off for student arrival and departure. The office space is minimal in size with little or no space for visitors to wait or process information.

Administration has a conference room and principal's office. The nurse has a separate space that is not visible for observation by staff other than the nurse. A restroom is not directly connected to the nurse room so students must move down a hall to a restroom. The nurse suite is undersized and should have a restroom in the suite.

A west facing entry in the south wing serves as bus arrival and departure access. Visual observation of this entry by staff is challenged by the location remote to most staff positions and narrow corridor inside.


West bus entry


East student entry

Classrooms

Classrooms in the original building are close to Minnesota Department of Education guidelines. They range from 860 square feet to 1,200. Kindergarten addition from 1993 is approximately 1,200 square feet. Staff have few collaborative spaces so classrooms function as teacher offices. Breakout spaces exist primarily in small rooms accessed from the main hallway. Their size and location do not support student collaborative work space. Digital projectors are present in most instruction rooms. Cabinets from the original construction, with varying ages, are appropriate for storage. Cabinet bodies have needs for a few repairs.

APPENDIX

FACILITY ASSESSMENT - PROBSTFIELD CENTER FOR EDUCATION

Facilities Assessment Summary

Student and teacher furniture is well maintained but varies in age and adaptability. Student desks are for groups of 4 to 6 students. Classrooms are mostly rectangles and furniture is tightly organized. Some furniture does not take advantage of best practices of flexible groupings.

A few classrooms have been remodeled in the 1966 north wing with new casework. These rooms have been repurposed to classrooms.

North classrooms- refurbished

South addition classrooms

Special Education and Facilities

Special Education is structured with a main room serving most functions. Smaller breakout spaces are not present. They are approximately sized for small numbers of students at a time although they are not fully integrated with other instructional spaces. One space is separate and remote from other classrooms. Rooms tend to be interior with no outside windows or access to daylight. Staff are housed within teaching spaces.

Wall surfaces are mostly gypsum board and the ceiling is exposed structural concrete 'T' sections with minimal acoustical treatment. Floors are carpeted except at sinks. Casework needs minor repairs and refurbishing or replacement.

Casework condition

Special Ed / O. T.

Specialty Rooms

Media has a newly remodeled space located in the center area of the building. The size is small with only one or two sections able to attend at one time. There is no daylight in this space. Storage is undersized and limited by the surrounding room uses. The small size and relation to other rooms makes the space less effective and does not promote collaboration.

The separation of programs in the building does not promote synergy between groups. The individual wings can work together but the wings are separated by long corridors. The building lacks variety in small and medium breakout spaces for instructional use.

Facilities Assessment Summary

Gymnasium

The original gymnasium is located on the east side of the 1966 building. It supports cafeteria and recreation functions. The gym is centrally located between original classroom wings. Gymnasium equipment in the original gym is in good condition.

1990 addition

Gym and classroom addition

A new gym is being constructed with a full basketball court. Cross-court basketball standards are retractable for two teaching stations.

Instructional Support and Flexibility/Adaptability

The building core has few support spaces except the staff break room and coordinating offices. Small group space is created within the round center spaces of the 1966 wings and repurposed rooms. Daylight comes in through high clerestory windows so no view is available. The arrangement is not conducive to collaboration. Staff can support individualized/differentiated learning within the main classroom spaces, but adequate breakout rooms are not evident. Flexibility could be increased with common areas that are multipurpose for a variety of group sizes.

District Administration Wing

District administration functions are located in the west 1970 wing and were remodeled in 2004. The entry provides good visual security. Administrative offices are located toward the west wall accessed from a double loaded corridor with support spaces across the hall. The district Board Room and central technology suite are on the east side of this wing. Support spaces are large, meeting most functional needs.

Wood trim and gypsum board finishes appear near new for this 10 year old remodeling. A new entry on the east side is showing deterioration of concrete retaining walls and rust on rails just above the concrete steps.

Building Services / Storage

The delivery dock and trash are on the east side of the building directly off the parking lot. There is little separation for cars and deliveries. Trash and recycling sit unscreened adjacent to the main building. Dock height is approximately 16" to a sidewalk without weather covering. This height only works well for van type vehicles. Steps and handrail are in poor condition and need replacement.

Receiving has several storage rooms off an internal corridor so movement of materials is not efficient. Connections to the interior of the building are limited to a single door opening to an interior hallway.

Facilities Assessment Summary

Probstfield Center For Education

Storage for building wide use is not adequate and dispersion is not consistent. Staff reports materials are stored off site and must be brought in at times.

Custodial areas are generally small rooms with inadequate storage. North and south wings have a custodial closet but the Kitchenette and Gym do not.

Security/Safety

Visibility down corridors is good only for limited distances before turns. Staff spaces are not adjacent to corridors for the most part making security monitoring difficult.

Site / Outdoor Learning and Activity

Outdoor learning spaces are not developed on the perimeter of the building at the time of this review. Playgrounds are to be relocated on the north side of the new addition. The site can support outdoor learning areas but was not specifically developed for this purpose. A large grass area on the east side of the site appears adequate for this age of students. Single family residences are on two side of the play fields with 24th Avenue South along the north side.

The proposed playground size will be inadequate for the new school population. A complete plan of the relocated play ground was not available at the time of the review.

Site / Circulation / Safety

Bus and parent drop-off and pick-up are along the east street curb. Visitor parking for District Administration is along the same curb line as bus queuing, creating a potential conflict. Staff and a larger visitor parking is on the northeast side of the building.

The paved northeast parking area serves as the student drop off. Staff explained pick-up is the most challenging time for safety in this lot. Parents drive thorough the parking lot creating congestion. A separate drop-off lane design should be considered for improved safety. Smaller buses for special education drop off is located on the north curb line.

Parking lot is being expanded this year. The lot is adequate for most days except District Training days when the lot is full. The School Board meets on the site and can have capacity attendance.

Trash and service loading is on the same parking lot as cars. Maintenance and deliveries should be clearly separated from student areas.

Exterior Envelope

The original construction is a steel structure with exterior precast concrete on the north and south portions of the building. Windows are narrow vertical openings between the finish of the concrete wall panels. Exterior sealant joints between precast concrete wall panels have hardened. They are past their service life and are ready for replacement.

Facilities Assessment Summary

Probstfield Center For Education

1990 addition

Original north wing

Brick covers exterior sides of the 1970 addition building. The masonry construction has a minimal wall cavity so the insulation value is low by current energy standards. Areas of the brick mortar have aged and require tuckpointing. North and west exposures of the brick have a greater need for corrections, including at the 1993 additions.

The precast wall panels are generally in good condition with some repairs. A poured concrete maintenance strip at the north wing has settled and is separated at the building face. Surface water streaming down the walls is able to collect along the foundation.

1993 addition

Original north wing

Windows

Perimeter classrooms have daylight access through windows. The original windows are single glazed and perimeter sealant has aged, needing replacement. 1966 windows are narrow due to locations between fins of the exterior concrete wall panels. Effective daylight harvesting is minimized by the size and spacing. The system is in good condition but is past the anticipated life span and should be replaced with energy-efficient units.

In later additions, windows have insulated glass in aluminum frames.

Roof Assembly

The built-up-bituminous roof is 20 years or older. This roof system is near the end of its calculated lifespan. A thorough review by a roof specialist may determine its actual remaining life expectancy. Roof slope to drains appears minimal with dark areas indicating short term ponding occurs.

Roof replacement over the student east side entrance, north of the gym, on the 1993 addition, was taking place in August 2014.

Facilities Assessment Summary

Probstfield Center For Education

Interior Finishes

Carpet is the predominant flooring material. VCT is used in wet areas adjacent to sinks. The corridors are also carpeted. Most of the carpet is in good condition with portions of the original wings in need of replacement.

Acoustical tile and grid ceilings have been installed in a remodeling and are generally in good condition. Some areas of ceiling tile have slightly sagging panels. The original 1967 building has a substantial amount of glue applied acoustical ceiling between structural concrete roof deck and around the circle common areas that is in fair condition.

Original corridor construction materials of brick and concrete block are in excellent condition. Some original building hallways have wood panels. These are generally in good condition but make the appearance dark.

Restrooms are mostly single use and are internal to classrooms usually supporting one or two classrooms. When they are available to common hallways the number of fixtures is too few. In spite of many single restrooms within classrooms, the location and quantity of larger restrooms is not adequate for the population. Availability of staff restrooms is inadequate without moving some distance away from their classroom.

Restrooms throughout the building are generally accessible but vary in condition. Many have been remodeled so only a few need updating. In a few locations new towel dispensers are within the clearance dimensions for sinks reducing their accessibility.

First Floor classroom

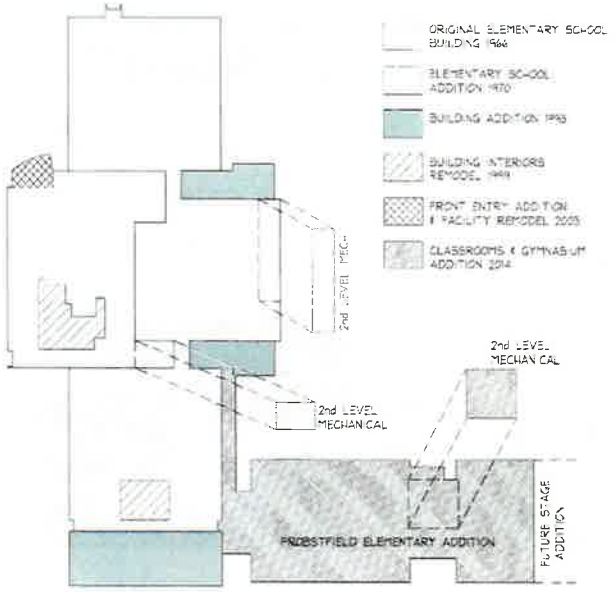
North exterior service and dock

Facilities Assessment Summary

Probstfield Center For Education

Hallway with lockers -1993 addition

Common area /center round room grouping 1966



MBN ENGINEERING

August 25, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Civil Narrative
Moorhead Schools Master Planning (Probstfield Elementary School)
Moorhead, MN
MBN Project No.: 14-160

Dear Steve:

This letter is a follow up from our site visit on August 25, 2014. The purpose of the visit was to familiarize ourselves to the existing facilities in order to assist with the master planning phase; also we performed a visual assessment review of the existing facility.

We will breakdown our summary based on the civil design components associated with the Probstfield Elementary School.

Parking Lots

West Parking Lot
Good drainage throughout the lot. Sidewalk and curb are in good condition. Recommend seal coat in two to three (2-3) years. Drainage away from the building is excellent. Small signs of settling are visible along the building. Sidewalk panel near city sidewalk, north of door #2 has a cracked corner. This could be a potential tripping hazard in the future. I would recommend replacing panel in the next couple years.

East Parking Lot
Step by door #7 is damaged, I would recommend fixing in the next year. Along doors #5, 6, and 7, there is a potential spot for someone to fall off the loading area. I would recommend installing a railing in the next year. Curbs and sidewalks are in good condition. There is good drainage on the parking lot as well. East half of parking lot is new, would recommend seal coat in seven (7) years.

Utilities

All pertinent public service utilities (sewer and water) appear to be readily available from 24th Ave S & 14th St S. Utility services are currently in place and the storm sewer appears to be functioning at the current locations.

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Erosion Control

For all projects, erosion and sedimentation control is required to prevent sediment transport downstream or off-site. Additionally, projects that are one acre or more in disturbance will be required to follow the guidelines of the Storm Water Pollution Prevention Plan and obtain the National Pollution Discharge Elimination System (NPDES) permit as regulated by the Minnesota Pollution Control Agency (MPCA). Erosion and sedimentation control measures include, but are not limited to, silt fence, inlet protection devices, rock construction exits, and temporary seeding.

Miscellaneous

Items that were not verified, but may be requisite with a building addition include:
1. Verification of parking required compared with provided.
2. ADA compliance of any disturbed area that serves as an ADA route.
3. Impervious coverage allowable compared to total impervious existing and proposed.
4. Size of storm water management suitable to meet requirements.

Summary

The purpose of our site visit was to provide a site conditions visual inspection assessment. As mentioned, our recommendations are primarily maintenance based with two (2) parking lots requiring more immediate improvements.

If you have any questions, please contact me at 701-478-6336.

Sincerely,

Joshua M. Magelky, P.E.
Civil Engineer

sk

APPENDIX
FACILITY ASSESSMENT - PROBSTFIELD CENTER FOR EDUCATION

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September 26th, 2014

Cunningham Group
Attn: Steve Albertson, AIA
201 Main Street SE, Suite 325
Minneapolis, MN 55414

RE: Moorhead Area Public Schools (MAPS) Master Planning
Facilities Condition Assessment – Probstfield Elementary / Center For Education (PCE)
104.0001

Mr. Albertson:

As requested, Heyer Engineering (Heyer) conducted a visual walkthrough and observation of Probstfield Elementary School / Center for Education, one of Moorhead Area Publics Schools' district wide facilities. The observation took place on August 19, 2014. The purpose of the walkthrough was to observe the condition of the structure and preliminarily assess the building's condition from a structural standpoint to aide with MAPS master planning efforts. The level of assessment performed was not comprehensive in nature in that it was solely a visual assessment of easily accessible areas. Since many of the walls are covered by finishes, wall panels, or earth, our walkthrough and observation was limited visual signs of defects such as cracks, sloping floors, and surface deterioration of materials. Heyer had very limited access to the roof, so most observations were made from inside or from ground level on the exterior.

Existing Structure:

The existing building is a one story multipurpose facility and is approximately 68,000 SF. The original building dates to 1966 with significant additions to the structure constructed in 1970, 1993, and in 2014. Existing drawings of the original structure were not available for review, but the original building largely consists of precast double tee roof system with masonry walls with some structural steel framing. The gymnasium space is framed by CMU walls and precast concrete double tee roof panels. There are a couple of smaller mechanical mezzanines with in the original structure. The 1970 addition is largely steel bar joist roof framing with masonry walls and some structural steel supported beams and columns. Foundations walls appear to be cast in place concrete supported by what is assumed to be spread concrete footings. The 1993 additions are largely framed by steel bar joists and structural steel. The exterior façade for the entire facility consists primarily of either masonry veneer or precast concrete double tee wall panels. A large addition of 8 class rooms, a gymnasium, and some miscellaneous support spaces is currently under construction. The new construction consists of masonry bearing walls with steel joist roof and some isolated structural steel framing at corridors and new entrance canopy.

Visual Observations:

Upon commencing an observation of the interior of the building, in general the building appeared to be in good condition. In the classroom spaces, most of the double tee roof system was the exposed ceiling. No noticeable deficiencies were observed with concrete. No noticeable deficiencies were also observed within the interior walls or the building, such as masonry, plaster, or gypsum board cracks. The slab on grade concrete floors were almost in their entirety covered by finishes, mostly VCT or carpet, but no noticeable signs of any structural issues were observed.

Upon walking the exterior of the structure, the overall condition of the building appeared to be good. There were two areas of potential future structural concern. On the north side of the building a few precast concrete double tee wall panels were exhibiting cracking. Cracks were somewhat large in nature toward the top of the stem portion of the tee. Without repair continued water and freeze thaw cycles will continue to deteriorate the concrete. Secondly, in a randomly selected observation, the brick mortar on the east façade at the gymnasium was still intact, but starting to deteriorate. A basic scraping of the joints with a hand tool, did remove some mortar material, Indicating that some exterior deterioration has begun.

Summary:

Overall, the Probstfield Elementary/Center for Education building appears to be structurally sound and in good condition. The building appears to be have been maintained well over its lifespan. Heyer would recommend repairing exterior cracks observed in the exterior precast wall panels. It is also recommend to periodically review the condition exterior brick mortar. Sometime in the future, the brick façade may need to be tuck pointed. Heyer cannot predict future conditions the exterior brickwork may be subjected, however it seems that tuck pointing the some of the exterior brickwork may be necessary in years to come.

If you have any further questions or comments, please contact us.

Sincerely,

HEYER ENGINEERING, PC

Eric A. Greiff, PE
Sr. Project Engineer

ONE

OBERMILLER NELSON
ENGINEERING

MECHANICAL EVALUATION – PROBSTFIELD ELEMENTARY

Date	October 2014
Project #	2014172
Project Name	Moorhead Schools Masterplan
Project Location	Moorhead, MN
Description	Evaluate HVAC Systems at the Probstfield Elementary

Mechanical Overview:
The school was built new in 1965 with multiple additions and remodels (1969, 1993, 2003 and 2014) over the years. All systems are in good working order. The building is heated and cooled throughout and is partially covered by an automatic fire protection system.

Heating System:
Steam for the building heating system is generated using two (2) boilers installed in 2004. One boiler was new at that time and one was refurbished unit. . The boilers are natural gas fired with fuel oil backup. Hot water is created using steam to hot water heat exchangers and is circulated throughout the building with base mounted and in-line pumps.

The classroom portions of the building are heated using classroom unit ventilators in each classroom. The district office portion of the building is heated using variable air volume boxes with heating coils. The kitchen and special services areas are heated using the natural gas fired sections of rooftop air handlers. The original gymnasiums are heated with air handlers located in a mechanical room above the kitchen. Cabinet unit heaters are used in the vestibules and suspended unit heaters are located in the storage and mechanical rooms.

Gas fired hot water boilers were added in 2014 to heat that gymnasium and classroom addition.

The heating system is in fair condition.

Cooling System:
Cooling for the building is furnished by two (2) air cooled chillers located on grade to the east of the mechanical room. A pair of circulating pumps in the boiler room distributes chilled water to cooling coils in each of the classroom unit ventilators and air handlers.

An air cooled chiller was added in 2014 to provide cooling in the gymnasium and classroom addition. Circulating pumps are located in the mechanical room and piped to the air handlers and chiller.

The cooling system is in fair condition.

Ventilation System:
An air handler is located in mechanical room on the roof of the district office portion of the facility. One air handler on the roof feeds the kitchen area and a second rooftop air handler feeds the special services area. The district office air handler is in good condition and the rooftop air handlers are in fair condition.

BUILDING SYSTEMS CONSULTANTS

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The 2014 addition has two (2) air handlers located in a mechanical room in the addition. One air handler feeds fan powered variable air volume boxes in each of the addition classrooms.

Each classroom is zoned using classroom unit ventilators. Located in each room, the units draw fresh air from louvers through the exterior wall and the heating /cooling coils modulate to satisfy the thermostat setpoint.

Plumbing:
The domestic water equipment and piping is in fair condition.

Fire Protection:
The building has a wet fire protection sprinkler system that is in good condition. Most of the building is covered with a classroom wing of the original building left to sprinkle.

Automatic Temperature Controls:
The automatic temperature controls in the building are a mixture of pneumatic and electronic. The controls are in fair condition.

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MBN ENGINEERING

September 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Electrical Condition Assessment
Moorhead Schools Master Planning (Probstfield Center for Education)
Moorhead, MN
MBN Project No.: 14-160

A recent walkthrough of the Probstfield Center for Education, part of the Moorhead School District in Moorhead, MN was conducted. The purpose of this walkthrough was to assess the present condition of the electrical and technology systems within the building. The following systems were included in the assessment:

- Lighting systems and controls
- Electrical power distribution systems
- Fire alarm system
- Class call and clock system
- Telecommunications wiring system (data network and telephone)
- Camera surveillance and security systems

Electrical Power Distribution Systems

Probstfield Center for Education was built in 1966 and was remodeled in 2004. The local power provider is Moorhead Public Service. The facility has a 2,000 ampere, 208/120 volt, 3 phase electrical service that provides power to the entire facility. The peak demand for the facility was 232 KVA or 645 amperes and it was recorded in September of 2013.

The 2,000 ampere main service switchboard is in good condition and has some space available for additional distribution circuit breakers for future equipment in the facility. The mechanical HVAC systems in the facility are fed at 208 volts, 3 phase. The motor control centers, motor starters and variable frequency drives for the HVAC system pumps, air handling units and fans are generally in good condition. There are a small number of stand-alone motor starters from the original 1966 project that are in place that should be replaced. The remainder of the power distribution equipment in the facility consists of panelboards to power the branch circuit receptacles, the lighting systems, and other equipment throughout the facility. About one-half of the panelboards were installed since 2004 and are in good condition with some space in most areas for additional circuits to be added for new

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equipment or modifications. The remainder of the panelboards in the facility are from the original 1966 construction project. All of those original panelboards should be upgraded as they are past their rated service life.

The facility has an emergency generator to serve the emergency egress lighting in some areas of the building, the building heating system, the server room and the fire alarm system. The generator is rated at 75 kilowatts, 208/120 volts, 3 phase, it is located in an exterior self-contained enclosure and is in good condition.

Lighting Systems and Controls

Lighting throughout much of the facility consists primarily of fluorescent recessed lighting fixtures that utilize T8 lamps and fluorescent ballasts. The light fixtures are in good condition and utilize a light source that is energy efficient. There are a few areas such as the old gymnasium and cafeteria that has fluorescent fixtures with inefficient T12 lamps. Any lighting that utilizes T12 lamps should be upgraded. In addition, there are 15 classrooms that have surface mounted light fixtures with older light fixtures. It is recommended the lighting be upgraded in these spaces with a lay-in acoustical ceiling installed.

Emergency egress and exit lighting throughout much of the building consists of emergency light fixtures with battery backup. Many of these fixtures are fairly new and appear to be operational, however some of the fixtures are older and likely need to be upgraded. In the new area of the building the emergency lighting is connected to the emergency generator. This emergency lighting is in good condition and appears to be functioning adequately.

Exterior lighting consists of exterior building mounted light fixtures and pole mounted parking lot light fixtures. The light fixtures are in good condition and utilize HID light sources. The newest addition and associated parking lot lighting is LED and is in excellent condition. An LED upgrade to the HID fixtures should also be evaluated, however an economical upgrade or replacement is more difficult to obtain.

Fire Alarm System

The fire alarm system is a Simplex 4010 analog addressable system and the facility presently has a wet pipe fire suppression system.. The fire alarm system is in good condition. The system appears to have adequate coverage for the annunciation horn/strobes and the detection devices appear to be located as required by the building code.

Class Call and Clock System

The existing class call and clock system is a Rauland Telecenter ICS system. The system has paging and talk-back speakers with clocks located in all of the classrooms and in other spaces in the facility where an instructor or administrator needs to communicate with the main office. In addition, paging speakers are located in the corridors, commons, gymnasiums and other large areas to provide change of class period tones and for general announcements. The system is in good condition and appears to be working properly.

Telecommunications Wiring System

The present telecommunications wiring system consists of a main distribution room located on the first floor near the media center with several intermediate distribution closets located

throughout the facility. The data network backbone cabling system is multimode fiber optic cable interconnecting the wiring closets. The analog telephone system backbone cabling system is multipair, category 3 copper cabling interconnecting the wiring closets. The backbone cabling system and wiring closets are in good condition and have space for additional connectivity.

The horizontal wiring system consists of Category 5 enhanced rated copper cables routed from the wiring closets to the individual data and telephone jacks throughout the building. The cabling and termination jacks are in good condition and functioning properly.

Also, the classrooms presently are outfitted with analog tube style televisions. These displays are not compatible with modern high definition signals for instructive purposes. It is recommended that the televisions be replaced with high definition flat panel displays sized for adequate viewing in the room and that HDMI cabling be considered for interconnections to the displays.

Camera Surveillance and Security Systems

The facility presently has a digital camera surveillance system that utilizes Pelco digital cameras with a central network video recorder. The system is in good condition. In addition, the facility has a Lenel access control system to allow for card key access to certain doors throughout the building. The system is in good condition and can be expanded.

Reported by,

Michael A. Berger, P.E., LEED BC&D
Electrical Engineer

Facilities Assessment Summary

Robert Asp Elementary School

Building Area:
98,515 Sq. Ft.

Building Vintage:
1957 with additions
1989, 1992
1993 and 1998
2004 Renovation


South, Main Entry


East wing

Robert Asp Elementary School is located at 901 North 11th Street. Opened in 1958, the building was constructed as a junior high school and renovated into an elementary school in 2004.

- Original construction 1958 - 80,000 sf
- 1989 - special education addition - 1,885 sf
- 1993 - Classroom addition, Media Center infill and Administration remodel - 13,300 sf
- 1994 - elevator addition
- 1999 - Music addition

Total building area is 98,515 sf

School enrollment is 844 (2012 data) serving students in grades K-5.

The building has a two level academic wing with a double loaded corridor that is oriented north/south on the site. The main entrance is east of the academic wing and connects through the building to the secondary entry on the north. Gymnasium and specialized classrooms are organized on the east half of the building connected by a 'u' shape corridor. A mechanical penthouse is adjacent to the gym.

On the east side of the main entry corridor is the multipurpose/ cafeteria followed by the gym. Two major corridors run east and west separating academic rooms for large cafeteria/ multipurpose and gym spaces. On the north corridor is the music suite and on the end the art group of rooms was included in a 1990s addition. The south side has kindergarten rooms and classrooms.

An addition is under construction on the east side of the building with a main gym, kindergarten room small group room and restrooms. The gym appears to have minimal daylight openings. The approximate size is 11,000 sf.

Entry

Entries occur on the south and north sides the south side is for visitors and parent drop off. The south side has the largest parking area. A second parking lot is on the west side of the school. Student drop off is in the south parking lot utilizing a one way traffic flow.

Buses queue on the on the north side curb line where students enter through a secondary entry into the main north/south hallway. Both sides are fully accessible.

The north entry is directly adjacent to the loading dock and trash enclosure. There is potential for traffic and students to interact in this area. A better separation is desirable.

Facilities Assessment Summary

The school property has well developed residential neighborhoods on all sides. On the east side is a running track and space for large field sports.


North Entry


West side

Classrooms

1958 classrooms have approximately 950 square feet. Instruction spaces are mostly located on the exterior walls for daylight access. The exception is special education that is on the north side of the gym.

Staff have collaborative spaces near groupings of six to eight classrooms. They tend to be near stairways in the academic wing helping support visual observation.

Breakout spaces exist primarily in limited areas so are not generally available throughout the building. Their size and location do not support student collaborative work space. Classrooms also function as teacher touch down spaces.

Cabinets from the original construction are appropriate for storage. Cabinet installations have a few areas for minor repairs. Student and teacher furniture is well maintained but varies in age and adaptability. Classrooms are rectangles and furniture is tightly organized


Classroom facing south


Classroom casework

The main classroom wing is used for grades 2-5 and has more traditional furniture. Furniture cannot be configurable to take advantage of best practices of flexible groupings.

Flexibility could be increased with common areas are created within classroom groupings for smaller and larger groups with transitional furnishings.

APPENDIX
FACILITY ASSESSMENT - ROBERT ASP ELEMENTARY

Facilities Assessment Summary


Classroom facing south


Classroom desks and storage

Special Education and Facilities

Special Education is interspersed throughout the building. The spaces are generally sized appropriately and some have a main room and smaller breakout spaces. Although distributed in the building, they are not fully integrated with other instructional spaces. SE staff are housed within teaching spaces.


Special education


O.T Room

Specialty Classrooms

Art is located on the furthest east end of the building with one studio space and are directly adjacent kiln room. It is remote from other academic program spaces. Daylight is very good with north facing windows. The space is undersized for the variety of equipment and instruction provided.

Storage is located in the main art room and undersized for the student population. Expansion for storage would reduce usability of the next door rooms. The separation in the building does not promote synergy between programs or collaboration with electronic media.


Art room


Art room storage

Facilities Assessment Summary

Music is located on the north side in a group of rooms including rooms and storage. The room sizes are on the low side for Minnesota state guidelines but are well suited to their uses. Storage is in the room or down the hall near the Orchestra office.

Media Center spaces are in good condition. The spaces are central in the academic wing directly west of the administration office. The computer lab is accessed directly from the Media Center and a second door goes directly to the technology lab for support functions. The network data center is located in an adjacent space with separate cooling.


Media Center


Computer lab

Kindergarten rooms are on the east side of the building. The rooms are adequate in size. A classroom across the hall to the north has been converted to Kindergarten Finishes are in good condition. These space have aged well with quality maintenance.


Original kindergarten

Gymnasium

Gymnasium space is from the original construction. Located on the east side of the main entry corridor is a complete gym with two cross stations. An operable partition can separate the gym halves to provide programming flexibility. Gym flooring is resilient and perimeter walls are concrete masonry. The ceiling is exposed steel structure. Sound panels have been added to the upper walls. The gym equipment appears to be in serviceable condition.

Facilities Assessment Summary

Robert Asp Elementary School

Main gym – folding partition

Addition under construction

Instructional Support and Flexibility/Adaptability

The building core has few support spaces sprinkled through the plan. They occur in the form of Staff resource rooms, staff break room and work rooms. Small group space is generally not available with a few exceptions. Staff have few spaces to support individualized/differentiated learning except in the areas of kindergarten and special education.

Flexibility could be increased with common areas are created within classroom groupings for smaller and larger groups with transitional furnishings. The addition under construction has one athletic office and one resource room.

The only spaces large enough for all school gatherings are the original gym and the new gym.

Staff Spaces

Staff resource rooms occur paired with other rooms so are not generally accessible from the corridor. The locations lessen collaborative use.

Administration

Reception and administration offices are located at the entry front corner of the main entry hallway. The office is open with ample glazing. It has a direct view of the vestibule but lacks the ability to control entry by requiring passage into the office first. This solution could be achieved with a remodeling the inside vestibule to connect to the administration office

Administration functions are spread along the main north and south corridor with quick access to other parts of the school. The nurse area is smaller than expected for the school population.

Cafeteria and Food Service

Cafeteria seating is in six sections at a time with about 150 kids per seating. They are grouped b\y age beginning at 10:30 am and ending at 1:30 pm. The space is used for other activities before, during and after school.

Kitchen is in good condition including floor and wall finishes. Some equipment is showing age and should be evaluated by a food service professional, included workflow.

Facilities Assessment Summary

Robert Asp Elementary School

Cafeteria

Kitchen Serving

Building Services / Storage

The delivery dock and trash are on the north side of the building directly off the street and adjacent to the north entry doors. There is little separation for buses and deliveries. Loading dock trash and recycling are in screened enclosure adjacent to the north building entry.

Custodial areas and receiving are adequate in size. Custodian space throughout the building is small with too little storage. As new projects are considered the available custodian space should be expanded. Building-wide storage is too little and not dispersed adequately.

Security/Safety

The main office is located near the visitor entry with a full view of people as they enter the vestibule. Relocating the office directly adjacent to the public entry and providing a through office entrance control would be a security improvement. Visibility down corridors is good only for limited distances before a turn. Staff spaces are adjacent to corridors and importantly on the connecting corridors north and south so they provide passive observation. This is also true on the academic wing upper level.

Site / Outdoor Learning and Activity

Outdoor learning spaces are available on the perimeter of the structure but have not been specifically developed for this purpose.

Fields adjacent to the school are shared land use with the City Park system. Field use is scheduled with the school Principal and the fields have demands outside school hours for youth programs and Tri-City soccer. The track is four lanes although it does not have a border. It is used by the school but also available for others.

Playground areas are open to playfields that makes expansion of activities easy. Playground equipment is undersized for the population of the school. The overall equipment and hard surface can support 2-3 classes as once. The school could expand and relocate the playgrounds to better suit different age groups and improve capacity accommodated.

APPENDIX
FACILITY ASSESSMENT - ROBERT ASP ELEMENTARY

Facilities Assessment Summary

Robert Asp Elementary School


Play equipment


Hard surface play area

Site / Circulation / Safety

Bus drop off is on the north side of the site and partially in the west parking lot. Approximately four buses queue in the west parking lot. Parent drop-off and pick-up are primarily through the south parking lot.

Parking for visitors and staff is on the south and west sides of the building. The bus drop off paved area is also the loading dock area. Trash and service loading is on the same side of the property as the bus curb line lot as cars. Maintenance and deliveries should be clearly separated from student areas.


South parking and drop-off

A separate storage building is on the east side of the building adjacent to the fields. The building is a one story wood frame structure with brick cladding. Materials stored are athletic and academic.


Interior separate storage building


Storage building exterior

Facilities Assessment Summary

Robert Asp Elementary School

Exterior Envelope

The original construction is a brick masonry with a steel roof structure. Glass curtain wall was added to the academic portions of the building in the most recent remodeling.

Brick covers exterior sides of the building where glass does not occur. In many locations the window system starts at the floor line. The foundation ledge is exposed in the original design. Some areas erosion has dropped the finished ground exposing some foundation insulation. The original masonry construction has a minimal wall cavity so the insulation value is low by current energy standards. The perimeter of the building should have the ground grade restored and areas of erosion from drain outlets corrected.


Brick exterior


Brick ledge and glazing

Windows

Perimeter classrooms have daylight access through a 10 year old curtain wall system. The original windows in later additions have insulated glass in aluminum frames. Addition windows are good quality and size.

The curtain wall system, added in the recent renovation provides ample daylight into instructional spaces located on the building perimeter. Two isolated areas on the curtain wall south addition to the classroom wing were reported to have water leaks under certain wind conditions. The leaks were reported on west and east sides.

Roof Assembly

The majority of the building has built-up-bituminous roof systems that match the age of the construction so they are 20 years or older. The roof system is near the end of its calculated lifespan. Dark areas on the roof indicate areas with low spots that retain water. At the time of reroof, insulation values and proper slope to drain should be corrected. A thorough review by a roof specialist may determine its actual remaining life expectancy.

Roofs over the classroom wing and gym/multipurpose were replaced in 2012 and 2013.

Facilities Assessment Summary

Robert Asp Elementary School

Main entry roof canopy

North side main roof

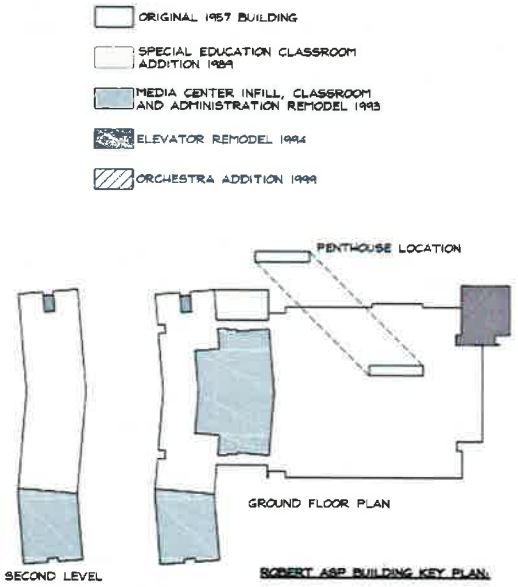
Roof over the main entry canopy is a single ply EPDM roof. The slope is inadequate so ponding occurs. When this roof is replaced the slope to scupper drains should be corrected.

Interior Finishes

Finishes throughout the building are in good condition. Original corridor floor is terrazzo that will last the life of the building. Additions have vinyl composition time in the corridors. Many classroom and support spaces have carpet in good condition.

Acoustical tile and grid ceilings are generally in good condition. Some areas of ceiling tile have slightly sagging panels.

Wall materials are well maintained in good to very good condition.



MBN ENGINEERING

August 25, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Civil Narrative
Moorhead Schools Master Planning (Robert Asp Elementary School)
Moorhead, MN
MBN Project No.: 14-160

Dear Steve:

This letter is a follow up from our site visit on August 25, 2014. The purpose of the visit was to familiarize ourselves to the existing facilities in order to assist with the master planning phase; also we performed a visual assessment review of the existing facility.

We will breakdown our summary based on the civil design components associated with the Robert Asp Elementary School.

Parking Lots/ Athletic Facilities

West Parking Lot
Good drainage in the parking lot. Sidewalk near stoop by door #2 has a trip hazard. I would recommend replacing the sidewalk in the next year. Parking lot should be crack sealed in the next couple years. Inlet on south side of lot should have concrete collar installed in the next year. This is done due to the fact that compaction of asphalt around castings tends to be lacking and infiltration around the casting is common. Signs of fatigue cracking in the parking lot indicate the parking lot is in need of mill and asphalt overlay in the next five (5) years. Some curbs are broken, are in need of repair. This can be done in the next couple years. The concrete crossing plate by the north side of the parking lot is in need of replacement. I would recommend it be done in the next couple years. Sidewalk near the north side of the parking lot needs replacement. Due to the fact that this is a major walking path I would recommend that it be replaced in the next year.

Northside
Asphalt near mechanical equipment on Northside is in need of a mill and overlay in the next couple years. Signs of soil near foundation wall setting. I would recommend building up the soil along the foundation wall to promote better drainage.

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Athletic Facilities
Track in good condition. Recommend seal coat in the next two (2) years to increase longevity. Concrete around basketball standards are showing signs of frost heaving, I would recommend grinding the concrete down.

South Parking Lot
Drainage is good in the parking lot, with the sidewalks and curbs in good condition. In middle of the parking lot, there is a fatigue crack that runs the entire width of parking lot. I would recommend routing and sealing that crack in the next year. I would recommend a chip seal of the parking lot in the next two (2) years.

Utilities

All pertinent public service utilities (sewer and water) appear to be readily available from 9th Ave N, 10th Ave N, & 11th St N. Utility services are currently in place and the storm sewer appears to be functioning at the current locations.

Erosion Control

For all projects, erosion and sedimentation control is required to prevent sediment transport downstream or off-site. Additionally, projects that are one acre or more in disturbance will be required to follow the guidelines of the Storm Water Pollution Prevention Plan and obtain the National Pollution Discharge Elimination System (NPDES) permit as regulated by the Minnesota Pollution Control Agency (MPCA). Erosion and sedimentation control measures include, but are not limited to, silt fence, inlet protection devices, rock construction exits, and temporary seeding.

Miscellaneous

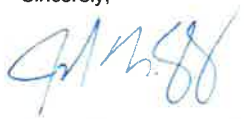
Items that were not verified, but may be requisite with a building addition include:
1. Verification of parking required compared with provided.
2. ADA compliance of any disturbed area that serves as an ADA route.
3. Impervious coverage allowable compared to total impervious existing and proposed.
4. Size of storm water management suitable to meet requirements.

Summary

The purpose of our site visit was to provide a site conditions visual inspection assessment. As mentioned, our recommendations are primarily maintenance based with two (2) parking lots and athletic facilities requiring more immediate improvements.

If you have any questions, please contact me at 701-478-6336.

Sincerely,



Joshua M. Magelky, P.E.
Civil Engineer

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September 26th, 2014

Cunningham Group
Attn: Steve Albertson, AIA
201 Main Street SE, Suite 325
Minneapolis, MN 55414

RE: Moorhead Area Public Schools (MAPS) Master Planning
Facilities Condition Assessment – Robert Asp Elementary School
104.0001

Mr. Albertson:

As requested, Heyer Engineering (Heyer) conducted a visual walkthrough and observation of Robert Asp Elementary School, one of Moorhead Area Publics Schools' district wide facilities. The observation took place on August 25, 2014. The purpose of the walkthrough was to observe the condition of the structure and preliminarily assess the building's condition from a structural standpoint to aide with MAPS master planning efforts. The level of assessment performed was not comprehensive in nature in that it was solely a visual assessment of easily accessible areas. Since many of the walls are covered by finishes, wall panels, or earth, our walkthrough and observation was limited visual signs of defects such as cracks, sloping floors, and surface deterioration of materials. Heyer had, limited access to the roof, mainly the low roof, so most observations were made from inside or from ground level on the exterior.

Existing Structure:

Originally built at the same time as the now Ellen Hopkins Elementary School, Asp and Hopkins share the same original and basic structural systems. (Hopkins was originally the South Junior High School while Asp was the North Junior High School) The existing building is a two story school facility originally built in 1957 and is approximately 106,000 SF. A number of additions were made between 1989 and 1999, and a major remodel into an elementary school was done in 2003. Existing drawings were not available to review for structure. The roof structure of the original building appears to consist primarily of thin, lightweight precast concrete planks supported by steel bar joists supported by masonry walls and steel beam and column system. The roof for the additions is likely framed with steel joists with metal deck. The gymnasiums walls are CMU. The original second floor likely is a cast in place concrete deck supported by steel beams and columns. The exterior façade consists of brick veneers and glazing systems. The exterior foundation wall is cast in place concrete resting upon what is assumed to be concrete spread footings.

Visual Observations:

Upon commencing an observation of the interior of the building, in general the building appeared to be in good condition. Again most of the building is covered in finishes, but no noticeable major deficiencies were observed within the interior walls, such as masonry, plaster, or gypsum board cracks. Slab on grade concrete floor were mostly covered by finishes in classroom and office areas, mainly VCT or carpet, but no noticeable signs of any structural issues were observed. The main corridor hallway floor were terrazzo and did show periodic cracking. However none of the cracks seemed inconsistent with the age of the building. Also, none of cracks observed, exhibited any vertical or horizontal movement that would might indicate a structural concern. The expansion joint placed between the 1989 addition and the original structure did show some wall cracks and distress with the floor finishes. There were also some minor cracking in the CMU stair shaft and gypsum/plaster interior walls near the transition. These cracks are likely due to settlement of the addition structure. A majority of the settlement for the addition structure that is to occur will have likely happened by now.

Upon walking the exterior of the structure, the overall condition of the building (brick veneer and glazing) appeared to be good. Brick mortar joints appeared to be in good condition.

Summary:

Overall, the Robert Asp Elementary School building appears to be structurally sound and in good condition. The building has been well maintained over its lifespan. Heyer does recommend continued periodic monitoring of the floor wall cracks around the stair well and expansions joints. While it is likely the building is no longer settling out, other latent extent conditions could be at work if significant future movement is observed.

If you have any further questions or comments, please contact us.

Sincerely,

HEYER ENGINEERING, PC

Eric A. Greiff, PE
Sr. Project Engineer

ONE

OBERMILLER NELSON
ENGINEERING

MECHANICAL EVALUATION – ROBERT ASP ELEMENTARY

Date	October 2014
Project #	2014172
Project Name	Moorhead Schools Masterplan
Project Location	Moorhead, MN
Description	Evaluate HVAC Systems at the Robert Asp Elementary

Mechanical Overview:
The school was built new in 1956 with multiple additions and remodels over the years. The latest addition of a gymnasium and classroom happened in 2014. All of the classroom units were replaced in 2001. All systems are in good working order with few problems. The building is heated and cooled throughout and is completely covered by an automatic fire protection system.

Heating System:
Hot water for the building heating system is generated using two (2) 60 BHP boilers installed in 2010 with one (1) 90 BHP boiler from the original construction us as backup and additional heat if needed. The boilers are natural gas fired with fuel oil backup. Hot water from the boilers is circulated throughout the building with base mounted pumps.

The building is heated using classroom unit ventilators in each classroom. Some of the additions are heated using terminal coils in each of the spaces. Fin tubed radiation is used at the exterior walls and under the windows. Cabinet unit heaters are used in the vestibules and suspended unit heaters are located in the storage and mechanical rooms.

The heating system is in fair condition.

Cooling System:
Cooling for the building is furnished by two (2) air cooled chillers located on grade to the north of the mechanical room. A circulating pump in the boiler room distributes chilled water to cooling coils in each of the classroom unit ventilators and air handlers.

The cooling system is in fair condition.

Ventilation System:
Air handlers are located in mechanical rooms in various parts of the facility. The air handler for the music addition feeds terminal coils for each space. An air handler on the roof feeds variable air volume boxes in the administration area and the media center and is equipped with variable frequency drives to allow reduced air flow and energy savings during unoccupied times. All air handlers are in fair condition.

Each classroom is zoned using classroom unit ventilators. Located in each room, the units draw fresh air from louvers through the exterior wall and the heating /cooling coils modulate to satisfy the thermostat setpoint.

Plumbing:
The domestic water equipment and piping is in fair condition.

Fire Protection:
The building has a complete wet fire protection sprinkler system that is in good condition.

Automatic Temperature Controls:
The automatic temperature controls in the building are electronic and in good condition. No system upgrades are required at this time.

BUILDING SYSTEMS CONSULTANTS

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MBN ENGINEERING

September 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Electrical Condition Assessment
Moorhead Schools Master Planning (Robert Asp Elementary)
Moorhead, MN
MBN Project No.: 14-160

A recent walkthrough of Robert Asp Elementary, part of the Moorhead School District in Moorhead, MN was conducted. The purpose of this walkthrough was to assess the present condition of the electrical and technology systems within the building. The following systems were included in the assessment:

- Lighting systems and controls
- Electrical power distribution systems
- Fire alarm system
- Class call and clock system
- Telecommunications wiring system (data network and telephone)
- Camera surveillance and security systems

Electrical Power Distribution Systems

Robert Asp Elementary was built in 1958 and was remodeled in 2004. The local power provider is Moorhead Public Service. The facility has a 2,000 ampere, 208/120 volt, 3 phase electrical service that provides power to the entire facility. The peak demand for the facility was 403 KVA or 1,120 amperes and it was recorded in May of 2012.

The 2,000 ampere main service switchboard is in good condition and has some space available for additional distribution circuit breakers for future equipment in the facility. The original main switchboard is now fed from the new switchboard, but remains in place. This piece of equipment is 55 years old and should be replaced. The mechanical HVAC systems in the facility are fed at 208 volts, 3 phase. The motor control centers, motor starters and variable frequency drives for the HVAC system pumps, air handling units and fans are generally in good condition. There are a small number of stand-alone motor starters from the original 1958 project that are in place that should be replaced. The remainder of the power distribution equipment in the facility consists of panelboards to power the branch circuit receptacles, the lighting systems, and other equipment throughout the facility. About one-half of the panelboards were installed since 2004 and are in good condition with some space in most areas for additional circuits to be added for new equipment or modifications. The remainder of the panelboards in the facility are from the original 1958 construction project. All of those original panelboards should be upgraded as they are past their rated service life.

The quantity of receptacles and circuits in the existing classrooms, receiving area and gymnasium is not adequate for the technology equipment and other equipment being utilized in those spaces. Additional receptacles and circuits should be added to avoid use of extension cords and overloaded circuits.

Lighting Systems and Controls

Lighting throughout much of the facility consists primarily of fluorescent recessed lighting fixtures that utilize T8 lamps and fluorescent ballasts. The light fixtures are in good condition and utilize a light source that is energy efficient. There are a few areas that utilize downlights with compact fluorescent lamps. It is recommended that a replacement LED light fixtures be explored for these light fixtures to provide better energy efficiency and to replace a lamps that tends to fail prematurely and is expensive to replace.

In addition, the lighting in the media center appears to be a little lower than desirable. This lighting level should be reviewed more closely to determine if additional lighting is warranted.

Emergency egress and exit lighting throughout much of the building consists of emergency light fixtures with battery backup. Many of these fixtures are fairly new and appear to be operational, however some of the fixtures are older and likely need to be upgraded.

Exterior lighting consists of exterior building mounted light fixtures and pole mounted parking lot light fixtures. The light fixtures are in good condition and utilize HID light sources. An LED upgrade to the HID fixtures should also be evaluated, however an economical upgrade or replacement is more difficult to obtain.

Fire Alarm System

The fire alarm system is a Simplex 4010 analog addressable system and the facility presently has a wet pipe fire suppression system.. The fire alarm system is in good condition. The system appears to have adequate coverage for the annunciation horn/strobes and the detection devices appear to be located as required by the building code.

Class Call and Clock System

The existing class call and clock system is a Rauland Telecenter ICS system. The system has paging and talk-back speakers with clocks located in all of the classrooms and in other spaces in the facility where an instructor or administrator needs to communicate with the main office. In addition, paging speakers are located in the corridors, commons, gymnasiums and other large areas to provide change of class period tones and for general announcements. The system is in good condition and appears to be working properly.

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Telecommunications Wiring System

The present telecommunications wiring system consists of a main distribution room located on the first floor near the media center with several intermediate distribution closets located throughout the facility. The data network backbone cabling system is multimode fiber optic cable interconnecting the wiring closets. The analog telephone system backbone cabling system is multipair, category 3 copper cabling interconnecting the wiring closets. The backbone cabling system and wiring closets are in good condition and have space for additional connectivity.

The horizontal wiring system consists of Category 5 enhanced rated copper cables routed from the wiring closets to the individual data and telephone jacks throughout the building. The cabling and termination jacks are in good condition and functioning properly.

Also, the classrooms presently are outfitted with analog tube style televisions. These displays are not compatible with modern high definition signals for instructive purposes. It is recommended that the televisions be replaced with high definition flat panel displays sized for adequate viewing in the room and that HDMI cabling be considered for interconnections to the displays.

Camera Surveillance and Security Systems

The facility presently has a digital camera surveillance system that utilizes Pelco digital cameras with a central network video recorder. The system is in good condition. In addition, the facility has a Lenel access control system to allow for card key access to certain doors throughout the building. The system is in good condition and can be expanded.

Reported by,

Michael A. Berger, P.E., LEED$_{BC\&D}$
Electrical Engineer

Facilities Assessment Summary

Red River Area Learning Center

Red River Area Learning Center


East Main Entry


South tenant entry

Building Area:
19,880 Sq. Ft.

Building Vintage:
1983

Red River Area Learning Center (RRALC): 1100 32nd Avenue South. Known as the Bella building, was constructed in 1984 as an office building and since 1999 is leased by the School District.

- Original construction 1983 – 19,880 sf (estimated)
- Ground floor estimate: 10,266 sf

Total building area is 19,880 sf

School enrollment averages 60 to 100 students (2012 data) serving students in grades 8-12.

The building has two levels with three connecting stairs. A continuous corridor connects the 2 story tall lobby with the north stair on the first and second floors. On the first floor an east/west corridor connects the lobby to the west door but there is an intervening room before the lobby.

The school occupies the ground floor with a small amount of storage space on the second floor. RRALC entrance is on the west side. A mechanical room on the upper level is supported with rooftop air conditioning condensing unit.

Entry

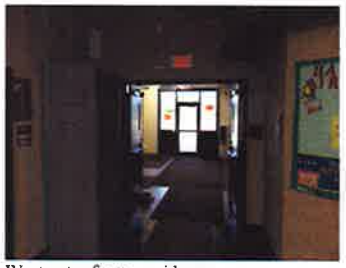
The west entry is the only entry for the school. An exit only door is on the north side. The administration suite is north of an entry lobby. There is no vestibule for this entrance. There was an overhead door that has been replaced with an aluminum door and glass system. This entrance is primary for students, staff and deliveries.

Reception is connected to the lobby with a counter pass through window. Office functions are adjacent to the reception area in a single room. An exit stair from the second floor has a door opening into this space.

Bus and parent drop-off occurs in the west parking lot. Space is sufficient because the buses are van size. The east entry is for visitors and parent drop off with a limited amount of parking. A south parking lot is available for other tenants and their visitors.

Facilities Assessment Summary

Red River Area Learning Center


West entry from corridor


South tenant entry

Classrooms

Instruction spaces are mostly located on the exterior walls, although daylight is minimal or not available. Several spaces are interior to the building corridors.

Collaborative spaces occur in some small areas or have been created within rooms used for other purposes. Staff have adapted the space and rooms they have to best meet the educational demands. Team Resource areas are not available in the limited space of the ground floor. Most spaces have digital projection and have casework without sinks. Classrooms also function as teacher touch down spaces.

Cabinets throughout the building are mismatched and some rooms have fewer than needed for storage. Student and teacher furniture is well maintained but varies in adaptability. Classrooms are rectangles and furniture is tightly organized. Student desks are traditional single worktop. Some rooms have attached chairs to desks making them a challenge for large bodies. Furniture type is difficult to take advantage of best practices of flexible groupings.


Classroom


Classroom

Specialty Classrooms

Art is delivered in spaces that are also used for several other activities.

Facilities Assessment Summary

Red River Area Learning Center

Music is shared space with other activities. The room is not well isolated. Storage occurs only within the room.

Music room storage

Media Center is not a place but is composed of shelving in the main corridor. The size and location do not support media center functions. More space for seating and computer access are needed.

Hallway shelves

Gymnasium

No interior recreation space is available.

Instructional Support and Flexibility/Adaptability

The building has few support spaces sprinkled through the plan. They occur in several forms of staff resource rooms, corridor furniture groupings and work rooms. Small group space is improvised on demand within larger rooms leaving no dedicated small group rooms. The delivery of the educational program would benefit from the creation of a variety of breakout spaces with flexible furniture.

There is no space large enough for all school gatherings.

Facilities Assessment Summary

Red River Area Learning Center

Staff Spaces

Staff are located in several areas some with offices and others in open spaces. There is a series of six offices on the east side of the building. They tend to be isolated so cannot support passive visual observation security. Staff collaborative room is a shared conference, social worker and instructional space.

Para-professional located in Commons

Testing

Administration

Reception and administration offices are located at the main west entry. The administration suite is north of an entry lobby. There is no vestibule for this entrance. Reception is connected to the lobby with a counter pass through window and is not a secured space. Office functions occur in a single room with space shared for student computer users.

The Reception space is small for two and one half staff positions. Without a reception enclosure the space is cold in the winter. Both issues could be corrected with a remodeling to create a vestibule and higher security.

Reception Desk window to Lobby

Administration and computer lab combined

The nurse area is a small alcove in the office/computer lab made with system furniture panels. The separation is inadequate and there are no cabinets or plumbing nearby. Other accommodations are needed for this function.

Facilities Assessment Summary

Red River Area Learning Center

Cafeteria and Food Service

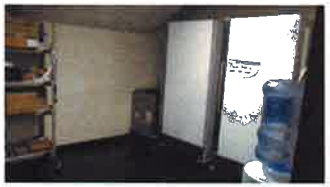
Cafeteria seating is in the Commons space. The space is used for other activities including a workstation for the para-professional. Serving utilizes two lines. The organization with returning trays has cross traffic patterns due to the serving occurring on the south side of the Commons and away from building hallways.

The cafeteria serves food prepared at the High School and brought to this site. Approximately 80% of attendees receive free or reduce cost breakfast and lunch.

Kitchen area is in good condition including floor and wall finishes. The area is too small for best operations.


Cafeteria serving


Kitchen


Cold food storage


Cafeteria

Building Services / Storage

The deliveries and trash are on the west side of the building at the main building entrance. There is no separation of service traffic from students and visitors. The access drive is common with the west parking lot. Loading, trash and recycling are not screened. This condition could be avoided by using the south entry for the main school entry.

Custodial areas and receiving are not adequate in size. Custodian space is one small room for the entire building. Building-wide storage is inadequate except for space borrowed from the upstairs. In general storage is very short of the need.

Facilities Assessment Summary

Red River Area Learning Center

Security/Safety

The dean's office is located away from the main entry so the only observer of those entering is by the reception staff. The reception desk is open to the corridor. Creating a secured reception and an access control into the school is recommended.

Visibility down corridors is generally poor with back passages to the east side of the building. Simplified circulation corridors would help by providing staff observation paths for passive security.

Site / Outdoor Learning and Activity

Outdoor learning spaces are available on the perimeter of the building on three sides. There are no developed outdoor spaces for athletics or learning. Improvements for both conditions should be considered.

Students have access to a public park approximately one block away, although students must leave the campus. Portable basketball stands are available for use in the west parking lot.

The field on the north side of the building is not flat making use difficult.


Portable basketball


North side access

Site / Circulation / Safety

The west side of the site provides bus drop-off, parking and delivery circulation. In general these are too confined and make for a hazardous condition.

Parking is short by approximately 15 stalls creating congestion. A site improvement would be a larger parking area and a dedicated bus maneuvering space.

Exterior Envelope

The exterior construction is precast concrete wall panels. Second floor and roof structure is precast concrete. The system is in very good condition.

Facilities Assessment Summary

Red River Area Learning Center

Windows

The window system throughout is in good condition, although very limited in size. Perimeter classrooms have daylight access through small windows. On the north side and second floor, windows are high on the wall. Most spaces do not have daylight access. Reorganization of the interior spaces could allow deeper access to daylight.

Roof Assembly

The building has single ply EPDM roof with rock ballast beyond the expected life. The roof system has had leaks recently and should be replaced soon


North side main roof


Northwest

Interior Finishes

Finishes throughout the building are in average condition. The floors are either vinyl composition tile or carpet covering. Many classroom and support spaces have carpet in average condition.

Acoustical tile and grid ceilings are generally in serviceable condition. However they are discolored with some sagging. The system should be replaced in the near term. Some areas of ceiling tile have stains from pipe leaks.

Wall materials are well maintained and in average condition.

MBN ENGINEERING

August 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Civil Narrative
Moorhead Schools Master Planning (Red River Area Learning Center)
Moorhead, MN
MBN Project No.: 14-160

Dear Steve:

This letter is a follow up from our site visit on August 19, 2014. The purpose of the visit was to familiarize ourselves to the existing facilities in order to assist with the master planning phase; also we performed a visual assessment review of the existing facility.

We will breakdown our summary based on the civil design components associated with the Red River Area Learning Center.

Parking Lots

South Parking Lot
Sidewalks and curbs in good condition, although the sidewalk appears to drain toward door #1. When parking lot is replaced, this issue can be resolved. South parking lot is in ok condition. There are some signs of cracking and asphalt overlays have built-up in the flow line of the curb in some spots. I would recommend lowering parking lot in order to promote positive drainage away from building in the next five (5) years. Also appears there is no storm sewer for south side of site. When parking lot is replaced I would recommend installing storm sewer. There is one (1) handicap accessible sign missing in the parking lot. This should be installed in the next year. There is settling along north side of building. I would recommend filling in washed out areas and installing concrete splash pads to get water away from building all along north side and also the south side near the down spouts in the next year. For the most part, there is good drainage away from the building. The lack of storm sewer promotes standing water though. Stoop near door #2 has signs of faulting, possible place for door jam. I would recommend fixing in the next year.

West Parking Lot
Sidewalks are in excellent condition and the curbs are in good condition. Asphalt parking lot is in need of repair. Water appears to surface drain to the south to 32nd Ave S. The water ponds and doesn't make it to the street. I would recommend installing storm sewer and repairing areas affected. The sooner this is done the longer the asphalt pavement's life will

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be. Dumpster should be placed on concrete to keep from sinking into asphalt. This could be done when other improvements are being made.

Utilities

All pertinent public service utilities (sewer and water) appear to be readily available from 32nd Ave S. Utility services are currently in place and appear to be functioning at the current locations.

Erosion Control

For all projects, erosion and sedimentation control is required to prevent sediment transport downstream or off-site. Additionally, projects that are one acre or more in disturbance will be required to follow the guidelines of the Storm Water Pollution Prevention Plan and obtain the National Pollution Discharge Elimination System (NPDES) permit as regulated by the Minnesota Pollution Control Agency (MPCA). Erosion and sedimentation control measures include, but are not limited to, silt fence, inlet protection devices, rock construction exits, and temporary seeding.

Miscellaneous

Items that were not verified, but may be requisite with a building addition include:
1. Verification of parking required compared with provided.
2. ADA compliance of any disturbed area that serves as an ADA route.
3. Impervious coverage allowable compared to total impervious existing and proposed.
4. Size of storm water management suitable to meet requirements.

Summary

The purpose of our site visit was to provide a site conditions visual inspection assessment. As mentioned, our recommendations are primarily maintenance based with two (2) parking lots requiring more immediate improvements.

If you have any questions, please contact me at 701-478-6336.

Sincerely,

Joshua M. Magelky, P.E.
Civil Engineer

sk

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September 26th, 2014

Cunningham Group
Attn: Steve Albertson, AIA
201 Main Street SE, Suite 325
Minneapolis, MN 55414

RE: Moorhead Area Public Schools (MAPS) Master Planning
Facilities Condition Assessment – Red River Alternative Learning Center (RRALC)
104.0001

Mr. Albertson:

As requested, Heyer Engineering (Heyer) conducted a visual walkthrough and observation of the Red River Alternative Learning Center, one of Moorhead Area Publics Schools' district wide facilities. The observation took place on August 19, 2014. The purpose of the walkthrough was to observe the condition of the structure and preliminarily assess the building's condition from a structural standpoint to aide with MAPS master planning efforts. The level of assessment performed was not comprehensive in nature in that it was solely a visual assessment of easily accessible areas. Since many of the walls are covered by finishes, wall panels, or earth, our walkthrough and observation was limited visual signs of defects such as cracks, sloping floors, and surface deterioration of materials. Heyer had very limited access to the roof, so most observations were made from inside or from ground level on the exterior.

Existing Structure:

The RRALC is currently housed in a somewhat non-traditional type school building. The RRALC currently occupies the entirety of the first floor of a two story office building, less entrance area. The 2nd floor of the building currently houses varius other business type offices and light storage spaces. Our research indicates the structure was built in 1983. No existing drawings of the building were available, but it appears the 2 story structure is constructed entirely of concrete. Roof and 2nd floor structure consist of precast flat planks, mostly likely hollow core, supported by precast concrete beams and columns. Walls are constructed of an insulated flat panel precast planks. The building is assumed to be founded upon a cast in place foundation wall and spread footing system.

Visual Observations:

Upon commencing an observation of the interior of the building, in general the building appeared to be in good condition. The nature of the concrete building construction makes the building very robust in nature. While some of the interior finishes appeared to be in a used condition, the concrete building structure itself appeared to be in very good condition. No noticeable deficiencies were observed.

Moorhead Area Public Schools – Master Planning
Moorhead, MN
September 26, 2014

Upon walking the exterior of the structure, the overall condition of the building's exterior precast wall panels appeared to be good.

Summary:

Overall, the building that the RRALC is currently housed in appears to be structurally sound and in good condition. The building has been well maintained over its lifespan. The building's construction type and robust nature will allow for a long building life span.

If you have any further questions or comments, please contact us.

Sincerely,

HEYER ENGINEERING, PC

Eric A. Greiff, PE
Sr. Project Engineer

OBERMILLER NELSON
ENGINEERING

MECHANICAL EVALUATION – RED RIVER AREA LEARNING CENTER

Date	October 2014
Project #	2014172
Project Name	Moorhead Schools Masterplan
Project Location	Moorhead, MN
Description	Evaluate HVAC Systems at the Red River Area Learning Center

Mechanical Overview:
The center is located in leased office space. The spaces are heated and cooled using a single zone air handler with direct expansion cooling coil and hot water heating coils. Heating for the building is furnished by a natural gas fired boiler.

No evaluation of the mechanical systems was performed as the equipment is part of the overall building. Is should be noted that problems do exist with the system and it is of limited capacity. The building owner done a good job of trying to deal with the staff concerns.

Noted Deficiencies:
Items were noted by the staff as needing correction.

1. No control over the equipment and limited control of the space temperatures as the thermostats are centrally located and individual room control does not exist.

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MBN ENGINEERING

September 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Electrical Condition Assessment
Moorhead Schools Master Planning (Red River Alternative Learning Center)
Moorhead, MN
MBN Project No.: 14-160

A recent walkthrough of the Red River Alternative Learning Center, part of the Moorhead School District in Moorhead, MN was conducted. The building is not the property of the school district as the space is leased. The electrical systems are also not maintained by the school district. The purpose of this walkthrough was to assess the present condition of the electrical and technology systems within the building. The following systems were included in the assessment:

- Lighting systems and controls
- Electrical power distribution systems
- Fire alarm system
- Telecommunications wiring system (data network and telephone)

Electrical Power Distribution Systems

The local power provider is Moorhead Public Service. The facility has a 208/120 volt, 3 phase electrical service, rated 600 amperes.

The main service panelboard is in fair condition. There are adequate quantities of receptacles in the leased space for the use of the rooms.

Lighting Systems and Controls

Lighting throughout the leased space consists primarily of fluorescent lighting fixtures that utilize T8 lamps and fluorescent ballasts. The light fixtures are in fair condition and provide adequate lumens for the tasks.

Emergency egress and exit lighting in the building consists of emergency lighting fixtures and exit lighting fixtures with battery backup. The fixtures appear to provide adequate lighting for emergency egress and are in good working order.

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Fire Alarm System

There is presently a Fire Control Instruments zone wired fire alarm system in the building. The system provides smoke detection and notification of occupants in the event of an alarm condition. The system appears to be in fair condition and in good working order.

Telecommunications Wiring System

The present telecommunications wiring system consists of a small wiring rack located in the leased area.

The horizontal wiring system consists of Category 5 enhanced rated copper cables routed from the wiring rack to the individual data and telephone jacks throughout the building. The cabling and termination jacks are in good condition and functioning properly. The building is not presently on the Moorhead Public School district wide area network.

Reported by,

Michael A. Berger, P.E., LEED BC&D
Electrical Engineer

APPENDIX

FACILITY ASSESSMENT - S.G. REINERTSEN ELEMENTARY

Facilities Assessment Summary

S.G. Reinertsen Elementary School

S.G. Reinertsen Elementary School

Building Area:
106,000 Sq. Ft.

Building Vintage:
2004
2012 Addition

East Main Entry

West staff entry

S.G. Reinertsen Elementary School is located at 1201 40th Avenue South. The building opened in 2004, with an addition in 2012.

- Original construction 2004 – 103,600 sf
- 2012 – Cafeteria/Commons addition – 2,400 sf

Total building area is 106,000 sf

School enrollment is 601 (2012 data) serving students in grades 1-5.

The building has two level academic wings with a double loaded corridor that is oriented east/west on the site. The main entrance is east of the building and continues through the building to the west entry and gymnasium. Gymnasium and specialized classrooms are organized on the west half of the building along the north side of the main corridor. Academic classrooms are organized in 'house' groups connected by a 'U' shape corridor. A mechanical penthouse is adjacent to the gym.

The administration suite is located on the south side of the main corridor inside the vestibule. The next single story classroom group has perimeter classrooms around a core of small and large group spaces, a locker bay and restrooms. The next area has two classroom groups on each side of a two story Media Center. This central area has two stories of classroom groupings. The media center is a single floor space with a high volume up to the second floor classroom height. On the west end of the building are Cafeteria, Kitchen, Gym and Receiving. On the north side of the main corridor is the music suite, special education and a computer lab. The 2012 addition provides an extended space for Cafeteria seating.

Facilities Assessment Summary

S.G. Reinertsen Elementary School

Entry

Entries occur on the east and west sides of the building. The east entry is for visitors and parent drop off with a limited amount of parking. A bus drive and pull through parking is located with the east side entry and is separate from the auto drive lane. The west entry has the largest parking lot for staff and supports after hour programs. Both entrances are fully accessible.

East/west corridor

South corridor

Classrooms

Instruction spaces are mostly located on the exterior walls for daylight access. The exceptions are a fourth grade classroom on the first floor and some special education rooms on both floors.

Collaborative spaces occur with each classroom group except at the first floor west wing. The space has been enclosed to provide an additional 4th grade classroom. The Team Resource areas are open as a commons to classroom groupings. They are well supported with digital projection and have casework with sinks. Breakout spaces exist throughout the building. Their size and location supports student collaborative work space. Classrooms also function as teacher touch down spaces.

Cabinets throughout the building are equitable and are appropriate for storage. Student and teacher furniture is well maintained but varies in adaptability. Classrooms are rectangles and furniture is tightly organized. Student desks are traditional single worktop with storage tub underneath. Furniture type is difficult to take advantage of best practices of flexible groupings.

Classroom casework

Classroom

Special Education and Facilities

Special Education is interspersed throughout the building. The spaces are generally sized appropriately, with some having a main room and smaller breakout spaces. Although distributed in the building, they are not fully integrated with other instructional spaces, such as first and second grades. SE staff are housed within teaching spaces.

Facilities Assessment Summary

S.G. Reinertsen Elementary School

Specialty Classrooms

Art is located on the second floor on the north side of the Media Center. It has one studio space, a directly adjacent kiln room and a storage room. It is connected to the corridors of each of the second floor academic areas and directly adjacent to stairs to the first floor. Daylight is very good with north facing windows. Storage is located in the main art room and in an adjacent room. The space is adequately sized for the variety of equipment and instruction provided.


Art room

Music is located on the north side of the main corridor comprised of three separate rooms, with one for orchestra and two general music rooms. The room sizes are well suited to their uses. Storage occurs only within the rooms.


Music room

Media Center is a two story volume in the center of the academic houses. It has a main space with seating, stacks and computers with a side room for instruction. The computer lab is accessed across the corridor on the north side of the Media Center. Technology support functions are accessed from the main Media space. This space is also used for staff and adult meetings.

Building corridors are open to the Media Center on both floors. Sound is an issue at times when classes move between periods. The walls are mostly hard surfaces so sound travels easily and is reverberant. Separation or sound treatment is recommended for this space.


Media Center

Media Center instruction

Facilities Assessment Summary

S.G. Reinertsen Elementary School

Gymnasium

Gymnasium space is located on the west side of the building near the main corridor and west entry. It has is a main basketball court with two cross stations. An operable partition can separate the gym halves to provide programming flexibility. Evening basketball programs use this space.

Gym flooring is resilient vinyl composition tile and perimeter walls are concrete masonry. The ceiling is an exposed steel structure. A cushioned floor is recommended at the time of replacement for safety. Although the upper walls have sound perforated concrete block walls, the space is highly reverberant. Sound absorption panels are recommended to reduce reflective sound waves.

Large windows provide daylight. A PE Office and storage room open into and support the main gym space.

The gym equipment appears to be in good serviceable condition. The folding operable partition needs multiple repairs to correct broken bottom panel edges and some cladding panels are sliding out of position.


Gym

Gym – folding partition

Instructional Support and Flexibility/Adaptability

The building has support spaces sprinkled through the plan. They occur in several forms of Staff resource rooms, staff break room and work rooms. Small group space is available in each of the academic houses. The first and second grade wing has three spaces to support eight classrooms so may be short of needed space at times. Staff have numerous spaces to support individualized/differentiated learning.

Some flexibility will be lost as the commons areas are planned to be converted to classrooms to meet enrollment demands.

The only space large enough for all school gatherings is the gym.

Staff Spaces

Staff have collaborative spaces in the center wing near groupings of six to eight classrooms. The first and second grade wing does not have a staff collaborative room. They tend to be isolated so cannot support passive visual observation security.

Facilities Assessment Summary

S.G. Reinertsen Elementary School

Administration

Reception and administration offices are located at the main east entry. The suite includes reception, principal, storage, conference and nurse.

The reception desk is open to the building corridor just inside the vestibule. Reception has a direct view to the vestibule but lacks the ability to control entry by requiring passage into the office first. Reception is also not a secured space. A remodeling could achieve both corrections by remodeling the inside vestibule to connect to the administration office. The Reception space is small for two and one half staff positions. Without a reception enclosure the space is cold in the winter.

Reception Desk

The nurse area is small for the school population. The cot area and nurse's desk are in the same space so that private conversations may need to occur in another location.

Cafeteria and Food Service

Cafeteria seating occurs over a two hour period. The seating area commons was expanded in 2012. The space is used for other activities before, during and after school for the community. Serving utilizes two lines. The organization with returning trays has cross traffic patterns due to the serving occurring on the south side of the Commons and away from building hallways.

The Cafeteria Commons is used by the YMCA and other outside community groups. Child care is provided before and after school.

Kitchen is in very good condition including floor and wall finishes.

Cafeteria serving

Kitchen

Facilities Assessment Summary

S.G. Reinertsen Elementary School

Multipurpose - Cafeteria addition

Cafeteria

Building Services / Storage

The delivery dock and trash are on the west side of the building on the south side of the gym. Service traffic is separated from student and visitor areas although the access drive is common with the west parking lot. Loading dock, trash and recycling are screened.

Custodial areas and receiving are adequate in size. Custodian space throughout the building is small with too little storage. Building-wide storage is dispersed but varies in size based on building location. In general storage is short of need.

Security/Safety

The main office is located near the visitor entry vestibule with a full view of people as they enter the vestibule. The reception desk is open to the corridor. Creating a secured reception and an access control into the school is recommended.

Visibility down corridors is generally good. Staff spaces are adjacent to team resource spaces providing observation for passive security. The relationship is also true on the academic wing upper level.

Site / Outdoor Learning and Activity

Outdoor learning spaces are available on the perimeter of the building on three sides. A paved courtyard is on the south side adjacent to the Multi-purpose room. Formal learning spaces have not been created. There are opportunities for other outdoor learning settings that have not been specifically developed.

Play fields adjacent to the school are shared with community uses.

Playground areas are open to playfields allowing expansion of activities. Playground equipment is undersized for the population of the school. The overall equipment and hard surface play area is in good condition. The school could expand or relocate the playgrounds to better suit different age groups and improve capacity.

The field on the north side of the building was reported to be uneven ground plane making use difficult.

Facilities Assessment Summary

S.G. Reinertsen Elementary School

Site / Circulation / Safety

Bus drop off is on the east side of the site with a pull through organization near the east side entry and is separate from the auto drive lane. The west entry has the largest parking lot for staff and supports after hour programs. Parent drop-off and pick-up are primarily through the east parking lot. The bus and visitor parking have separate drives but the curb cuts are close together creating congestion. Parent drop off has a two way drive but left turning creates slow movement. A site improvement would be a separate exit drive and moving the bus and visitor curb cuts further apart.

A separate storage building is on the south side of the loading dock for outdoor maintenance equipment. The building is a one story wood frame structure.

Exterior Envelope

The exterior construction is a brick masonry with a steel structure and roof framing. The system is in very good condition.

Windows

The window system throughout is in good condition. Perimeter classrooms have daylight access through ample sized windows. Most spaces receive daylight.

Roof Assembly

The building has single ply EPDM roof with rock ballast and is 10 years old. The roof system is approximately through half of its calculated lifespan. Some roof areas were observed to have the ballast displaced and not fully covering the membrane. The rock should be redistributed and the cause of displacement determined.

North side main roof

Interior Finishes

Finishes throughout the building are in good condition. The main corridor floor is terrazzo that will last the life of the building. A few areas have cracks in the terrazzo floor that may be differential settling. The cracks appear to be stable and may only need cosmetic corrections. One column location has a vertical displacement at the floor isolation joints. The dimension is not great enough to be a tripping hazard and can be monitored for future changes. Secondary corridors have vinyl composition tile. Many classroom and support spaces have carpet in good condition.

Acoustical tile and grid ceilings are generally in good condition. Some areas of ceiling tile have stains from pipe leaks.

Wall materials are well maintained in good to very good condition. Painting of the interiors was reported to be occurring each year rotating through areas of the building. The gym ductwork paint is peeling.

MBN ENGINEERING

August 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Civil Narrative
Moorhead Schools Master Planning (S.G. Reinertsen Elementary School)
Moorhead, MN
MBN Project No.: 14-160

Dear Steve:

This letter is a follow up from our site visit on August 19, 2014. The purpose of the visit was to familiarize ourselves to the existing facilities in order to assist with the master planning phase; also we performed a visual assessment review of the existing facility.

We will breakdown our summary based on the civil design components associated with the S.G. Reinertsen Elementary School.

Parking Lots/ Athletic Facilities

Parking Lot (East Side)/Bus Drop-off
Inlet should be lowered on bus drop-off side. This should be repaired to ensure water doesn't pond and damage the asphalt pavement in the next year. Curbs are in good condition as well as the sidewalks. Missing two (2) handicap accessible signs, recommend installing new signs in the next year. Good drainage in the parking lot and the asphalt is in good condition. Recommend routing and crack sealing and a chip seal for the parking lot (east side) in five (5) years. The bus drop-off should be chip sealed in the next two (2) years. There is some separation of the stoop and concrete sidewalk near door #1. This could be a possible tripping hazard and should be fixed in the next year. One cracked sidewalk panel on south side of school, potential tripping hazard, recommend fixing in the next couple years. Overall there is good drainage throughout the site. Track show signs of faulting, recommend mill and asphalt overlay as well as resurfacing the track surface in the next two to three (2-3) years. Along the south side of school near the playground, the new concrete that was recently installed needs to be backfilled. This is a potential spot for a tripping hazard, I would recommend fixing in the next year. There is a sidewalk panel near door #10 that has sunk. This could be a possible tripping hazard and should be fixed in the next year. There are three (3) sidewalk panels near door #9 are low. These could be possible tripping hazards and should be fixed in the next year.

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Parking Lot (Northwest side)
Inlet directly west of generator needs to be lowered. This should be repaired to ensure water doesn't pond and damage the asphalt pavement in the next year. Curb near west side by fire truck turnaround is broken and is a potential tripping hazard. Recommend fixing in the next year. There is good drainage in the parking lot. The curbs and sidewalks are in good condition as well as asphalt. I would recommend chip seal in the next year. Missing hydrant marker sign near door #5, I recommend installing in the next year. The sidewalk near door #5 is a little higher than the stoop. This could be a possible tripping hazard and should be fixed in the next year. There is some separation of the stoop and concrete sidewalk near doors #3 and #4. These could be possible tripping hazards and should be fixed in the next year.

Utilities

All pertinent public service utilities (sewer and water) appear to be readily available from 40th Ave S & 14th St S. Utility services are currently in place and the storm sewer appears to be functioning at the current locations.

Erosion Control

For all projects, erosion and sedimentation control is required to prevent sediment transport downstream or off-site. Additionally, projects that are one acre or more in disturbance will be required to follow the guidelines of the Storm Water Pollution Prevention Plan and obtain the National Pollution Discharge Elimination System (NPDES) permit as regulated by the Minnesota Pollution Control Agency (MPCA). Erosion and sedimentation control measures include, but are not limited to, silt fence, inlet protection devices, rock construction exits, and temporary seeding.

Miscellaneous

Items that were not verified, but may be requisite with a building addition include:
1. Verification of parking required compared with provided.
2. ADA compliance of any disturbed area that serves as an ADA route.
3. Impervious coverage allowable compared to total impervious existing and proposed.
4. Size of storm water management suitable to meet requirements.

Summary

The purpose of our site visit was to provide a site conditions visual inspection assessment. As mentioned, our recommendations are primarily maintenance based with three (3) parking lot and athletic facilities requiring more immediate improvements.

If you have any questions, please contact me at 701-478-6336.

Sincerely,

Joshua M. Magelky, P.E.
Civil Engineer

sk

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September 26th, 2014

Cunningham Group
Attn: Steve Albertson, AIA
201 Main Street SE, Suite 325
Minneapolis, MN 55414

RE: Moorhead Area Public Schools (MAPS) Master Planning
Facilities Condition Assessment – S.G. Reinertsen Elementary School
104.0001

Mr. Albertson:

As requested, Heyer Engineering (Heyer) conducted a visual walkthrough and observation of S.G. Reinertsen Elementary School, one of Moorhead Area Publics Schools' district wide facilities. The observation took place on August 19, 2014. The purpose of the walkthrough was to observe the condition of the structure and preliminarily assess the building's condition from a structural standpoint to aide with MAPS master planning efforts. The level of assessment performed was not comprehensive in nature in that it was solely a visual assessment of easily accessible areas. Since many of the walls are covered by finishes, wall panels, or earth, our walkthrough and observation was limited visual signs of defects such as cracks, sloping floors, and surface deterioration of materials. Heyer had very limited access to the roof, so most observations were made from inside or from ground level on the exterior.

Existing Structure:

The existing building is a two story elementary school facility originally built in 2003, and is approximately 104,000 SF. A small lunch room expansion was made in 2012. As shown on the original construction documents, the roof structure of the building consists steel bar joist and metal deck with a ballasted roof system. Most all roofs are pitched. Roof structure is support by a structural steel beam and column system. In the gymnasium, CMU walls are utilized. 2nd floor structure and mechanical mezzanines are framed with 8" precast concrete hollow core planks, supported by structural steel columns and beams. The building is founded upon cast in place concrete foundation walls and spread footings. A concrete slab on grade is utilized for the 1st floor/ground level.

Visual Observations:

Upon commencing an observation of the interior of the building, in general the building appeared to be in very good condition. Most of the building is covered in finishes, but no noticeable deficiencies were observed within the interior walls, such as masonry, plaster, or gypsum board cracks. Slab on grade concrete floors were mostly covered by finishes in classroom and office areas, mainly VCT or carpet, but no noticeable signs of any structural issues were observed. The main corridor hallway floor is terrazzo.

Very small areas of cracks were observed at what appeared to be column isolation joints in the slab below. This would indicate some slight building settlement or seasonal movement in the slab on grade. The cracking and observed movements were minor in nature and are not considered a structural concern.

Upon walking the exterior of the structure, the overall condition of the building (brick veneer, architectural precast concrete, glazing) appeared to be good.

Summary:

Overall, the Reinertson Elementary School building looks to be structurally sound and in very good condition. The building has been well maintained over its lifespan. Heyer does recommend continued periodic monitoring of the floor cracks for any future movements. While it is likely that a majority of the building structure's potential settlement has now occurred, other latent extent conditions could be at work if significant future movement is observed.

If you have any further questions or comments, please contact us.

Sincerely,

HEYER ENGINEERING, PC

Eric A. Greiff, PE
Sr. Project Engineer

ONE

OBERMILLER NELSON
ENGINEERING

MECHANICAL EVALUATION – S.G. REINERTSEN

Date	October 2014
Project #	2014172
Project Name	Moorhead Schools Masterplan
Project Location	Moorhead, MN
Description	Evaluate HVAC Systems at the S.G. Reinertsen

Mechanical Overview:
The school was built new in 2003 and all mechanical systems date from that time. All systems are in good working order with few problems. The building is heated and cooled throughout and is completely covered by an automatic fire protection system.

Heating System:
Hot water for the building heating system is generated using three (3) 2000 MBH boilers. The boilers are natural gas fired. Hot water from the boilers is circulated throughout the building with base mounted pumps.

The building is heated using terminal coils in each of the spaces. Fin tubed radiation is used at the exterior walls and under the windows. Cabinet unit heaters are used in the vestibules and suspended unit heaters are located in the storage and mechanical rooms.

The heating system is in excellent condition.

Cooling System:
Cooling for the building is furnished by a nominal 340 ton air cooled chiller located on grade to the west of the mechanical room. A circulating pump in the boiler room distributes chilled water to cooling coils in each of the air handlers.

The cooling system is in excellent condition.

Ventilation System:
Air handlers located in mechanical rooms throughout the facility. Air handlers for the classrooms and offices feed terminal coils. Each of these units is equipped with variable frequency drives to allow reduced air flow and energy savings during unoccupied times. All air handlers are in good condition.

Each classroom and the support spaces are zoned using terminal heating coils. Air is delivered to the space and the terminal coil modulates the heating to satisfy the thermostat setpoint. Space cooling temperature is not controlled by the room thermostat, but is set by the AHU discharge setpoint.

Plumbing:
The domestic water equipment and piping is in good condition.

Fire Protection:
The building has a complete wet fire protection sprinkler system that is in good condition.

Automatic Temperature Controls:
The automatic temperature controls in the building are electronic and in good condition. No system upgrades are required at this time.

Noted Deficiencies:
All of the mechanical equipment is in good condition. Two items were noted by the staff as needing correction.

1. The area of the front reception desk is cold at certain times each day. This is caused by the location of the front entrance doors relative to the desk. During peak traffic times (start of the school day and end of the school day), the doors to the front vestibule remain open for extended periods of time with the movement of people in and out. The heater in the vestibule is unable to keep the cold out with the doors open as much as they are. Redesign of the entrance vestibule and the front desk would solve this problem.
2. The building is over-pressurized at certain times. The cafeteria and gymnasium are conditioned using single zone air handlers with gravity relief. During moderate weather, the units employ an economizer sequence which uses outdoor air to condition the space. When the units go into full economizer, the excess air is supposed to be relieved by roof hoods to the outside. The air does look for the easiest way to get out of the building and does so through the exterior doors. This allows the doors to remain open and not lock securely. Exhaust fans with variable frequency motors controlled by building pressure sensors would fix this problem.

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MBN ENGINEERING

September 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Electrical Condition Assessment
Moorhead Schools Master Planning (S.G. Reinertsen)
Moorhead, MN
MBN Project No.: 14-160

A recent walkthrough of the S.G. Reinertsen Elementary School, part of the Moorhead School District in Moorhead, MN was conducted. The purpose of this walkthrough was to assess the present condition of the electrical and technology systems within the building. The following systems were included in the assessment:

- Lighting systems and controls
- Electrical power distribution systems
- Fire alarm system
- Class call and clock system
- Telecommunications wiring system (data network and telephone)
- Camera surveillance and security systems

Electrical Power Distribution Systems

S.G. Reinertsen Elementary School was built in 2004 and the local power provider is Moorhead Public Service. The facility has a 1,600 ampere, 480/277 volt, 3 phase electrical service that provides power to the entire facility. The peak demand for the facility was 575 KVA or 692 amperes and it was recorded in May of 2013.

The 1,600 ampere main service switchboard is in good condition and has space available for additional distribution circuit breakers for future equipment in the facility. Lighting systems and the mechanical HVAC systems in the facility are fed at 277 volts single phase and 480 volts, 3 phase respectively. The electrical panelboards that serve the lighting systems throughout the building are in good condition with ample spare space and capacity for future modifications. The motor control centers that contain the motor starters and variable frequency drives for the HVAC system pumps, air handling units and fans are in good condition with adequate spare for future modifications. The remainder of the power distribution equipment in the facility consists of step down transformers and panelboards to power the branch circuit receptacles and other equipment throughout the facility. The

panelboards are in good condition with some space in most areas for additional circuits to be added for new equipment or modifications.

The facility has an emergency generator to serve the emergency egress lighting throughout the building, the building heating system, the kitchen freezers and refrigerators and powers the fire alarm and emergency communications systems. The generator is rated at 150 kilowatts, 480/277 volts, 3 phase, it is located in an exterior self-contained enclosure and is in good condition.

Lighting Systems and Controls

Lighting throughout most of the facility consists primarily of fluorescent recessed lighting fixtures that utilize T8 lamps and fluorescent ballasts. The light fixtures are in good condition and utilize a light source that is energy efficient. There are some areas of the facility that are using light fixtures with compact fluorescent light sources. It is recommended that these light fixtures be evaluated to see if an economical LED upgrade can be implemented to save energy over the long term. In addition, the lighting levels in the media center appeared to be somewhat lower than desirable. It is recommended that the lighting in this area be evaluated to determine if additional lighting be implemented to help with this situation.

Emergency egress and exit lighting throughout the building is connected to the emergency generator. The emergency lighting is in good condition and appears to be functioning adequately.

Exterior lighting consists of exterior building mounted light fixtures and pole mounted parking lot light fixtures. The building mounted light fixtures are in good condition, however the pole mounted light fixtures are failing prematurely due to a vibration issue with the poles. The existing light sources in the poles and on the building are HID light sources. An LED upgrade to the pole mounted fixtures in particular may be an option to mitigate the premature failure issue.

Fire Alarm System

The fire alarm system is a Simplex 4010 analog addressable system and the facility presently has a wet pipe fire suppression system. The fire alarm system is in good condition. The system appears to have adequate coverage for the annunciation horn/strobes and the detection devices appear to be located as required by the building code.

Class Call and Clock System

The existing class call and clock system is a Rauland Telecenter ICS system. The system has paging and talk-back speakers with clocks located in all of the classrooms and in other spaces in the facility where an instructor or administrator needs to communicate with the main office. In addition, paging speakers are located in the corridors, commons, gymnasiums and other large areas to provide change of class period tones and for general announcements. The system is in good condition and appears to be working properly.

Telecommunications Wiring System

The present telecommunications wiring system consists of a main distribution room located on the first floor near the media center with several intermediate distribution closets located

throughout the facility. The data network backbone cabling system is multimode fiber optic cable interconnecting the wiring closets. The analog telephone system backbone cabling system is multipair, category 3 copper cabling interconnecting the wiring closets. The backbone cabling system and wiring closets are in good condition and have space for additional connectivity.

The horizontal wiring system consists of Category 5 enhanced rated copper cables routed from the wiring closets to the individual data and telephone jacks throughout the building. The cabling and termination jacks are in good condition and functioning properly.

Also, the classrooms presently are outfitted with analog tube style televisions. These displays are not compatible with modern high definition signals for instructive purposes. It is recommended that the televisions be replaced with high definition flat panel displays sized for adequate viewing in the room and that HDMI cabling be considered for interconnections to the displays.

Camera Surveillance and Security Systems

The facility presently has a digital camera surveillance system that utilizes Pelco digital cameras with a central network video recorder. The system is in good condition. In addition, the facility has a Lenel access control system to allow for card key access to certain doors throughout the building. The system is in good condition and can be expanded.

Reported by,

Michael A. Berger, P.E., LEED$_{BC\&D}$
Electrical Engineer

Facilities Assessment Summary

Transportation Building

Building Area:
15,974 Sq. Ft.

Building Vintage:
1957
1964
1965
1968


South face, west side


Main entry, east side

The Transportation Building, 1304 15th Avenue North, is located on the north part of the City of Moorhead. The building serves Property Services and Transportation services including the Transportation office, bus dispatch, maintenance, equipment and storage.

- Original construction - 1957 - 6,000 sf
- Addition - 1964 - 4,800 sf
- Addition - 1965 - 2,400 sf
- Addition - 1968 - 2,400 sf
- Total building area is 15,974 sf

The building is one level and composed of two gable end steel structures joined at the eaves. A third structure is connected with a very low slope gable roof on the south side of the larger eastern structure. The buildings are steel structure with metal roofs and walls. The facility does not have fire sprinklers, and the larger bay is currently not heated.


East side, main service area


West side, north doors

The third structure is the public entry and provides offices, dispatch center, meeting and storage. Two large spaces are open to the roof structure. The main service bay is 4,990 square feet and the adjacent bay 6,290 is square feet. The south or front side of the larger space serves as storage and has a relatively new mezzanine.

Facilities Assessment Summary

Challenges for operations at this facility:

1. Approximately 9 of the 21 District owned school buses can be housed inside overnight. The facility currently has the capacity to house 21 buses, 5 vans, a delivery truck, 5 pick-up trucks, 2 one-ton dump trucks and 2 staff SUVs. The facility is also home to a few older vehicles that are no longer used for student transportation, but are used on occasion to make deliveries and to service district properties. They are 2 vans and a station wagon. Regarding student transportation, the District is serviced by a total of 70 school buses (21 owned and 49 contracted). The District is currently at capacity with the 21 school buses stored in the facility with only 1-2 spare buses. It is important to note that the facility has currently reached the maximum capacity for vehicle storage and would need to be expanded if additional vehicles were to be acquired.
2. Maintenance equipment for lawns and snow are also part of this operation.
3. District territory is large, approximately 30 miles spread north and south and width varying from 4.5 to 12 miles. Transportation facilities are located on the north side of railroad tracks with the schools south. Increased train traffic has made schedules more challenging.
4. On-site maneuvering is short of space particularly when the buses are parked.
5. Inadequate lighting
6. No wash bay
7. Electrical outlet distribution is inadequate
8. Exterior envelope water intrusion

In general the building is in poor condition and needs numerous corrections. If it is to be used for the future substantial renovation, full or partial replacement should be considered.

Entry/Office

Entry is on the south side. There is no vestibule allowing cold conditions directly into the office area. The office was previously a cold storage area and has been converted with interior gypsum walls and acoustical lay-in ceilings. Dispatchers are included in a main common area, separated by office system cubicle dividers. They have a direct view to the street for observation of vehicles. Acoustical separation is not adequate although the staff have developed a working system.

Single offices are on the perimeter of the common space. These spaces are adequately sized while some are also used for storage. There is no space for visitors to wait or process information. The common area serves as meeting room, breaks and lunch table.

The office functions are separated from the service bays by an inadequately sealed wall allowing diesel fumes and shop smells to enter the office.


Main entry


Common Area Meeting/Break

APPENDIX
FACILITY ASSESSMENT - TRANSPORTATION BUILDING

Facilities Assessment Summary

Transportation Building

Service Bays

Service bays are high volume spaces. The largest bay heating equipment is suspended from the roof structure but is not operational. The service bay has heat and it is the smaller of the two garage spaces.

Lighting is inadequate for many service activities. Electrical power outlet distribution does not support all work areas. There is no internal wash bay.


Service bay


Larger open space, unheated

Building Services / Storage

Storage occurs in most parts of the facility. A 1,685 square foot space on the south side of the large bay has a relatively new steel mezzanine to increase storage capacity. Some general District storage is included in the material handling areas.


Storage mezzanine


Service bay

Site / Circulation / Safety

Bus parking occurs on three sides of the building except the front. Visitor parking is in front of the main entry. Bus circulation is one way but space is inadequate for maneuvering when parking spaces are occupied.

Parking lot was being repaired with an overlay during the summer of 2014. During the observation visit only patching was occurring. In general the bituminous paving is in poor condition and quite old. It has received numerous patches and corrections to keep the system operational past its normal

Facilities Assessment Summary

Transportation Building

Exterior Envelope

The roof insulation is fiberglass batts at the underside of metal roof panels. Walls are a similar system. There is no continuous vapor retarder on the inside and the building has exterior air barrier. Insulation has gaps in many locations. These items lead to substantial heat loss in all areas of the building.

Exterior metal panels are heavily dented near the ground. The bottom few inches are rusted in most locations. Although galvanized, wall panels need paint over all surfaces.

Windows vary in age around the building. Original windows are steel with single glazing. These are past their normal service life and lack energy efficiency. Some windows have been replaced or added in the past. They appear serviceable and need maintenance for flashing at the head and sealant. Exterior sealant joints at wall panels have hardened. They are past their service life and are ready for replacement.

In general the building is in poor condition and needs numerous corrections if planned to keep it in service for the future. Water intrusion was reported to be a continual issue for repairs.


Metal panel bottom rust


Roof rust condition

Roof Assembly

The steel roof panels have large areas of rust and anchors are loose in some locations. The gable roofs meet at a low eave where water runs to a valley formed between the two roof forms. Although this intersection has a low pitch, it is a poor water shedding design. The roof is ready for replacement now. If this roof is replaced the valley condition should be increased in pitch.

Interior Finishes

Carpet is the predominant flooring material in the office area. VCT occurs in some wet areas and the remaining building is sealed concrete. The concrete is in serviceable condition considering its age.

Acoustical tile and grid ceilings have been installed in a remodeling and are in fair condition. These should be replaced when remodeling occurs.

Restrooms are single use and are internal to the office area. A separate restroom should be created for vehicle service workers.

MBN ENGINEERING

September 19, 2014

Mr. Steve Albertson
Cuningham Group
201 Main Street SE, Suite 325
Minneapolis, MN 55414

Subject: Electrical Condition Assessment
Moorhead Schools Master Planning (Transportation Building)
Moorhead, MN
MBN Project No.: 14-160

A recent walkthrough of the Transportation Building, part of the Moorhead School District in Moorhead, MN was conducted. The purpose of this walkthrough was to assess the present condition of the electrical and technology systems within the building. The following systems were included in the assessment:

- Lighting systems and controls
- Electrical power distribution systems
- Fire alarm system
- Telecommunications wiring system (data network and telephone)

Electrical Power Distribution Systems

The local power provider is Moorhead Public Service. The facility has two (2) 240/120 volt, 1 phase electrical services, one rated 300 amperes and one rated 200 amperes. The peak demand for the facility was 36 KVA or 148 amperes and it was recorded in March of 2014.

The main service panelboards, one in the southwest corner of the building and one in the shop are both in poor condition and do not have space for additional circuits or equipment to be added. The remainder of the panelboards in the facility are also in poor condition with little space for expansion. All of the panelboards should be upgraded as they are past their rated service life and additional capacity should be provided for the shop areas.

The quantity of receptacles and circuits in the shop areas is not adequate for equipment being utilized in those spaces. Additional receptacles and circuits should be added to avoid use of extension cords and overloaded circuits.

Lighting Systems and Controls

MBN ENGINEERING, INC. • Mechanical • Electrical • Civil • Transmission
503 7th St N • Suite 200 • Fargo, ND 58102 • phone: 701.478.6336 • fax: 701.478.6340 • www.mbnengr.com

Lighting throughout much of the facility consists primarily of fluorescent lighting fixtures that utilize T8 lamps and fluorescent ballasts. The exception is the bus garage, where incandescent light fixtures are in use. These light fixtures should be upgraded as the lighting levels are very low and the energy efficiency of the fixtures is poort. The light fixtures in most other areas of the building are in fair condition, but lighting levels in the shop space should also be increased. Additional fixtures should be implemented to provide better task light at the work benches and repair areas.

Emergency egress and exit lighting in the building should be reviewed. It appears that the emergency and exit lighting does not meet current code and should be upgraded or provided where not present.

Exterior lighting consists of exterior building mounted light fixtures. The light fixtures are in fiar condition and utilize HID light sources. It is recommended that a review of the exterior lighting be completed to ensure that adequate lighting in the areas where buses are stored and where they maneuver is provided. It appears that the exterior lighting is inadequate for security and maneuvering buses in non-daylight hours.

Fire Alarm System

Presently there is no fire alarm system in the facility. Because of the high value of the buses and other equipment being stored in the facility, installation of a fire alarm system should be considered.

Telecommunications Wiring System

The present telecommunications wiring system consists of a small wiring rack located in the office area.

The horizontal wiring system consists of Category 5 enhanced rated copper cables routed from the wiring rack to the individual data and telephone jacks throughout the building. The cabling and termination jacks are in good condition and functioning properly.

Camera Surveillance and Security Systems

The facility does not presently have surveillance or security, however this should be considered.

Reported by,

Michael A. Berger, P.E., LEED BC&D
Electrical Engineer

APPENDIX
FACILITY ASSESSMENT - TRANSPORTATION BUILDING

HEYER ENGINEERING, PC
Structural Consultant
1020 35th Street SW
Fargo, ND 58103
701-280-0949
701-280-9686 Fax
www.heyerengineering.com

123 3rd Street North – Suite 600
Minneapolis, MN 55401
612-238-3805
612-238-3806 Fax

September 26th, 2014

Cunningham Group
Attn: Steve Albertson, AIA
201 Main Street SE, Suite 325
Minneapolis, MN 55414

RE: Moorhead Area Public Schools (MAPS) Master Planning
Facilities Condition Assessment – Bus Garage
104.0001

Mr. Albertson:

As requested, Heyer Engineering (Heyer) conducted a visual walkthrough and observation of the Bus Garage, one of Moorhead Area Publics Schools' district wide facilities. The observation took place on August 25, 2014. The purpose of the walkthrough was to observe the condition of the structure and preliminarily assess the building's condition from a structural standpoint to aide with MAPS master planning efforts. The level of assessment performed was not comprehensive in nature in that it was solely a visual assessment of easily accessible areas. Since many of the walls are covered by finishes, wall panels, or earth, our walkthrough and observation was limited visual signs of defects such as cracks, sloping floors, and surface deterioration of materials. Heyer had no access to the roof, so observations were made from inside or from ground level on the exterior.

Existing Structure:

The existing building is a single Pre Engineered Metal Building (PEMB) type structure that houses the school district's bus fleet. The age of the original building is not known exactly, and no original plans were available for review, but it is likely a 1960s building. At least a couple of additions have been made over the years. The two garage bay buildings sit adjacent to one another, eave to eave, creating a valley in the roof between the two structures. Roof pitch for both PEMBs is approximately 4/12. A lower roof single pitched lean to type office addition is present of the south end wall of the east PEMB. Roof pitch for the lean to addition is approximately 1/12. The building is assumed to be founded upon a cast in place foundation wall and spread footing system.

Visual Observations:

Upon commencing an observation of the interior of the building, in general the building's structural components appeared to be in good condition. The PEMBs steel rigid frames, purlins and girts appeared to be in good condition, relative to their age, with no observed significant damage or deterioration. The interior of the office portion of the structure was covered in finishes and the structure was not easily

available for review. The older slab on grade in the garage portion of the buildings had cracking commensurate with the age of the building.

Upon walking the exterior of the structure, the overall condition of the building (Metal panels) appears to be in fair to poor condition. The building shows its age on the exterior. Many of the metal wall and roof panels have been dented, damaged, or show some rusting. The building's layout with the 4/12 pitched PEMBs adjacent to each other likely creates a significant snow drift deposit in the winter season.

Summary and Commentary:

Overall, while the structural "bones" of the PEMBs are in good condition, the exterior metal panels are in a poor condition. PEMBs are generally do not have the longest useful structural life when compared to other building types. The bus garage structure may be approaching the end of if useful life.

If you have any further questions or comments, please contact us.

Sincerely,

HEYER ENGINEERING, PC

Eric A. Greiff, PE
Sr. Project Engineer

OBERMILLER NELSON
ENGINEERING

MECHANICAL EVALUATION – PROPERTY SERVICE AND TRANSPORTATION OFFICE

Date	October 2014
Project #	2014172
Project Name	Moorhead Schools Masterplan
Project Location	Moorhead, MN
Description	Evaluate HVAC Systems at the Property Service and Transportation Building

Mechanical Overview:
The building is a purchased property of indeterminate age. The building was added on to several times in the past. All systems are in fair to poor condition.

Heating System:
The office area is heated using gas fired furnaces. Electric baseboard has been installed in areas needing additional heat. The garage spaces are heated using newer gas fired unit heaters.

Cooling System:
Direct expansion cooling coils in the furnaces provide zoned cooling of the office spaces. Individual offices are not separately controlled and a single thermostat controls all of the cooling. The garage and vehicle service areas are not cooled.

Ventilation System:
Ventilation for the office areas is provided by the furnaces. Limited fresh air is provided by the system. Exhaust fumes from the vehicle storage and maintenance bays frequently enter the spaces.

No ventilation or limited of the garage and maintenance spaces are provided.

Plumbing:
The domestic water equipment and piping is in fair condition.

Fire Protection:
The building has no fire protection sprinkler system.

Noted Deficiencies:
Items were noted by the staff as needing correction.

1. There are heating problems in all the offices. The floor is cold and the offices are cold most of the time.
2. Exhaust fumes from the garage are able to get into the office areas.

BUILDING SYSTEMS CONSULTANTS

FARGO
2201 12th St. N Suite E
701.280.0500

GRAND FORKS
311 4th St. S Suite 203
701.775.2594

BISMARCK
233 West Rosser Ave
701.222.0520

ALEXANDRIA
503 Hawthorne St. Suite 141
320.846.0300

APPENDIX
FINAL PRESENTATION

MAPS FACILITIES MASTER PLAN

MOORHEAD
AREA PUBLIC SCHOOLS

BOARD WORK SESSION
2.09.2015

PURPOSE

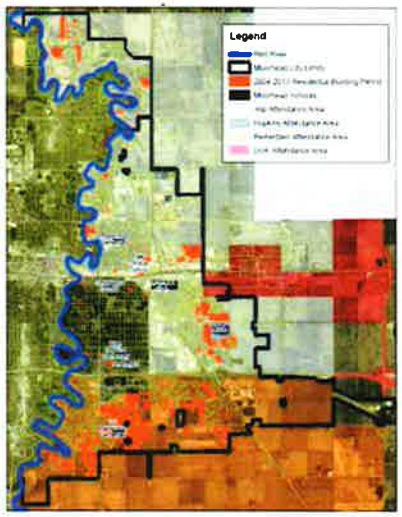
To gather final feedback (and answer questions) from the board as we fine-tune the recommendation put forth by the Facilities Master Plan Task Force.

SHARED FACILITY VISION

WE envision safe, inviting, and inclusive learning environments that support a sustainable culture of excellence in 21st Century learning, while fostering meaningful and collaborative community partnerships.

HOUSTON, WE HAVE A PROBLEM.

HOUSTON, WE HAVE AN OPPORTUNITY.



RESIDENTIAL BUILDING PERMIT LOCATIONS 2004-2013

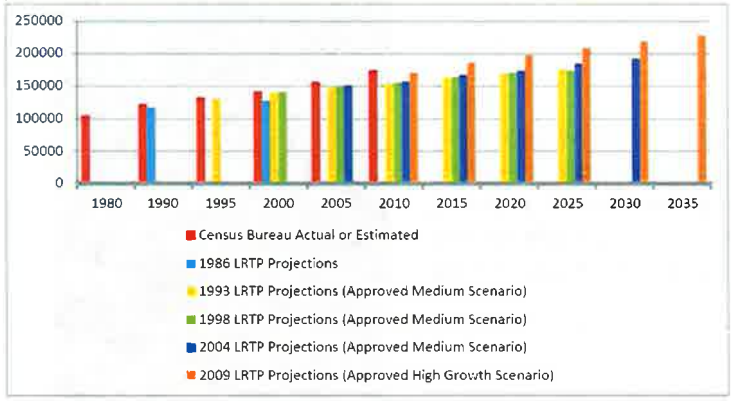
MOORHEAD'S POPULATION TRENDS

	Moorhead city, Minnesota	
	Population	% change
1990 Total Population	32,295	7.7%
2000 Total Population*	32,177	-0.4%
2010 Total Population	38,065	18.3%
2013 Census ACS 5-year estimate	38,609	1.4%
2015 MetroCOG Population Projection**	42,250	9.4%

*This decennial demographic information was used for the previous school facility study
** Includes the annexation of Oakport Town 2

FM MetroCOG completed a Demographic Forecast Study in December 2012 which includes population growth projections to 2040 for the metro area. This study can be accessed on their website: http://www.fmmetrocog.org/new/index.php?id=353

Figure 1. Comparison of Past FM Population Forecasts and Census Bureau Counts (1980-2035)



K-12 Capacity and Current/Projected Enrollment

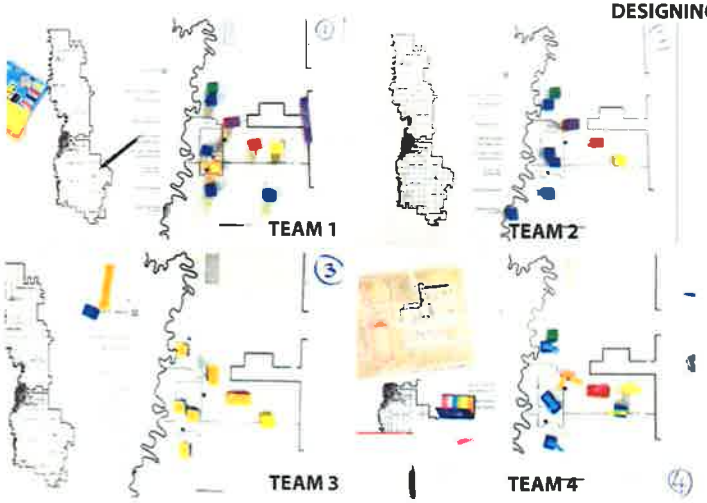
	Current Capacity	Projected Enrollment 2014/15	2016/17	2018/19	2020/21	2022/23	2024/25
Probstfield as Kinder. Ctr. *(2015)*	500						
Ellen Hopkins Elementary	750						
Robert Asp Elementary	750						
S.G. Reinertson Elementary	725						
K-5 Subtotal	**2725**	2851	3153	3153	3357	3357	3357
		126	428	428	632	632	632
Horizon Middle School	1300						
6-8 Subtotal	**1300**	1315	1369	1525	1785	1870	1870
		15	69	225	485	570	570
Moorhead HS	1700						
Red River ALC Building (RRALC)	100						
9-12 Subtotal	**1800**	1725	1807	1871	1966	2234	2542
		75	7	71	166	434	742

Alternative Learning Center	*At RRALC/Bella leased space*
Adult Basic Education (ABE)	*In leased space at 2215 12th Ave.*
Outreach	*At MHS leased space*
Early Learning, District Center	*At Probstfield*
Transportation Center	*At Bus Garage*

DISTRICT DESIGN PARAMETERS

- Plan for 550 students per grade grades K-4
- Plan for 600 students per grade grades 5-12
- Keep elementary enrollment to under 750
- Prefer locating kindergartens at elementary schools
- Minimize transitions
- Plan for a single High School
- Strive for equity across elementary level (size, program and amenities)
- Limit transportation time to elementary schools:
- Prefer centrally located Middle School and High School
- Consider locating ABE, RRALC and Community Education on one site
- Accommodate growth in Early Learning and Early Intervention.
- Avoid locating schools near industrial areas
- Eliminate leased space

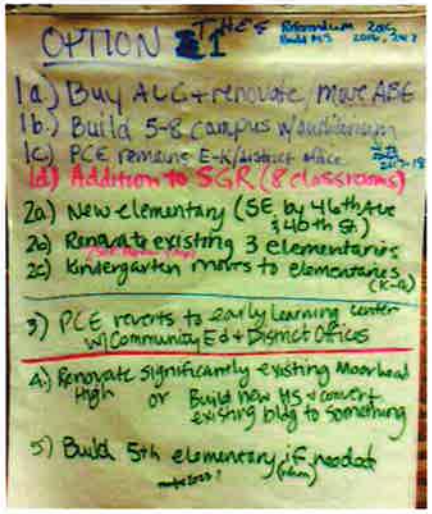
DESIGNING A DISTRICT



COMMON GROUND

- All teams proposed a K-4, 5-8 and 9-12 grade level configuration.
- All teams proposed a new K-4 Elementary school.
- All teams proposed four (4) K-4 facilities.
- All teams proposed a 5-8 campus structure.
- All teams added performance space at Horizon Middle School.
- All teams proposed a new high school and repurposing of the existing.

TASK FORCE RECOMMENDATION



TASK FORCE CONSENSUS REACHED IN WORKSHOP 4
11/24/2014

K-12 Capacity and Current/Projected Enrollment

	Current Capacity	Projected Enrollment 2014/15	2016/17	2018/19	2020/21	2022/23	2024/25
Probstfield as Kinder. Ctr. *(2015)*	500						
Ellen Hopkins Elementary	750						
Robert Asp Elementary	750						
S.G. Reinertson Elementary	725						
K-5 Subtotal	**2725**	2851	3153	3153	3357	3357	3357
		126	**428**	**428**	**632**	**632**	**632**
Horizon Middle School	1300						
6-8 Subtotal	**1300**	1315	1369	1525	1785	1870	1870
		15	**69**	**225**	**485**	**570**	**570**
Moorhead HS	1700						
Red River ALC Building (RRALC)	100						
9-12 Subtotal	**1800**	1725	1807	1871	1966	2234	2542
		75	**7**	**71**	**166**	**434**	**742**

Alternative Learning Center	*At RRALC/Bella leased space*
Adult Basic Education (ABE)	*In leased space at 2215 12th Ave.*
Outreach	*At MHS leased space*
Early Learning, District Center	*At Probstfield*
Transportation Center	*At Bus Garage*

Task Force Proposal: K-12 Capacity and Projected Enrollment

	Recommended Capacity	Projected Enrollment 2018/19	2020/21	2022/23	2024/25
Ellen Hopkins Elementary	750				
Robert Asp Elementary	750				
S.G. Reinertson Elementary	625				
New K-4 Elementary (2018/19)	750				
K-4 Subtotal	2875	2756	2756	2756	2756
		119	**119**	**119**	**119**
Horizon Middle School	1200				
5-6 Middle School Addition	1200				
5-8 Subtotal	2400	2097	2386	2471	2471
		303	**14**	**71**	**71**
Moorhead HS	2250				
Red River ALC Building (RRALC)	150				
9-12 Subtotal	2400	1871	1966	2234	2542
		529	**434**	**166**	**142**

Alternative Learning Center	*At Renovated Bella Building*
Adult Basic Education (ABE)	*At Renovated Bella Building*
Outreach	*At Renovated Bella Building*
District Center	*At Probstfield*
Early Learning	*Expands at Probstfield*
Transportation Center	*At Bus Garage*

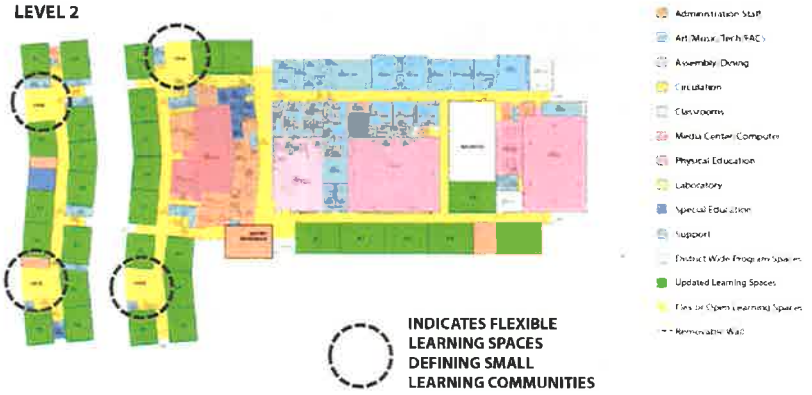
SECOND GRADE LEARNING STUDIO
NORTH PARK ELEMENTARY SCHOOL, Columbia Heights, MN

North Park Elementary
Columbia Heights, MN

21st Century Learning - Galtier Elementary School
St. Paul, Minnesota

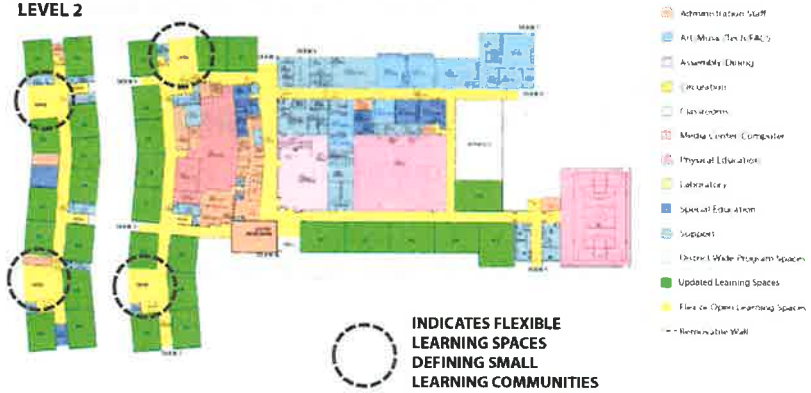
21st Century Learning - Galtier Elementary School
St. Paul, Minnesota

FAIR School Downtown
Minneapolis, MN



ELLEN HOPKINS ELEMENTARY
DESIGN CAPACITY: 750 STUDENTS

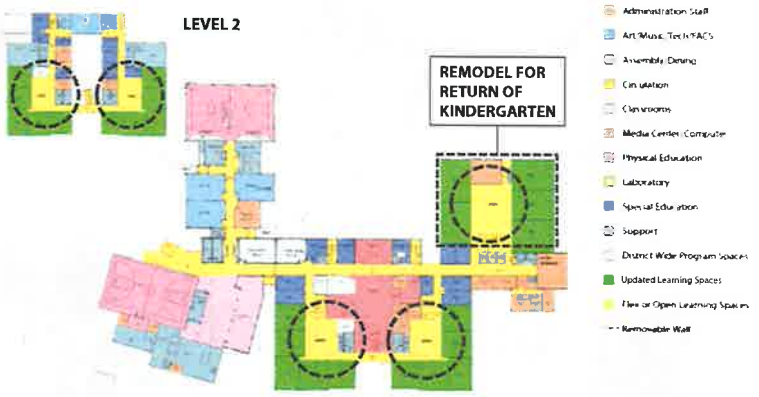
LEVEL 2



INDICATES FLEXIBLE LEARNING SPACES DEFINING SMALL LEARNING COMMUNITIES

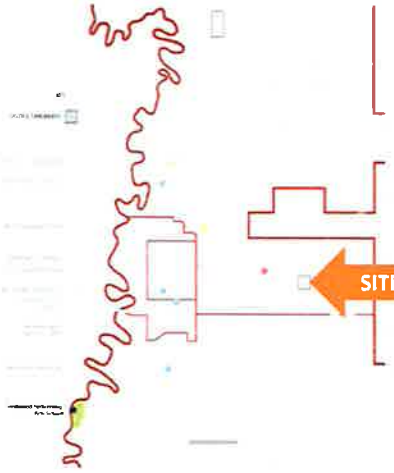
ROBERT ASP ELEMENTARY
DESIGN CAPACITY: 750 STUDENTS

LEVEL 2



INDICATES FLEXIBLE LEARNING SPACES DEFINING SMALL LEARNING COMMUNITIES

S.G. REINERTSEN ELEMENTARY
DESIGN CAPACITY: 625 STUDENTS (5 SECTION)



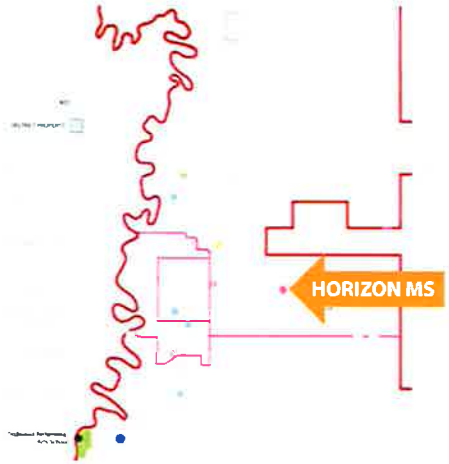
NEW K-4 ELEMENTARY

750 students
x 152 sf/std.
= 114,500 sf

Occupied Fall 2018

EARLY LEARNING PROGRAM EXPANDS WHEN KINDERGARDEN MOVES BACK TO CREATE K-4'S IN 2018

PROBSTFIELD CENTER
DESIGN CAPACITY: NA



5-6 ADDITION TO HORIZON MS CREATES 5-8 CAMPUS

1200 students
Plus Theater
= 195,000 sf

Occupied Fall 2018

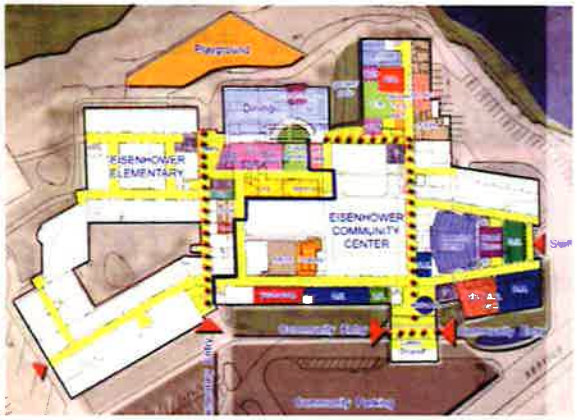
NEW 5-8 MIDDLE SCHOOL CAMPUS AT HORIZON
DESIGN CAPACITY: 1200 PLUS 1200 = 2400 STUDENTS

HIGH SCHOOL OPTIONS

ADDITIONAL CAPACITY NEEDED BY 2021/22

OPTION 1:

BUILD A NEW HS FOR 2250 STUDENTS ON EXISTING DISTRICT OWNED PROPERTY, WITH AN ADDITIONAL 40 ACRES.
CONVERT THE EXISTING FACILITY INTO A MULTI-FUNCTIONAL COMMUNITY CENTER.



Eisenhower Community Center
Hopkins Public Schools – District and Community Center and 750 Student Elementary

Eisenhower Community Center
Hopkins Public Schools – District and Community Center and 750 Student Elementary

HIGH SCHOOL OPTIONS

ADDITIONAL CAPACITY NEEDED BY 2021/22

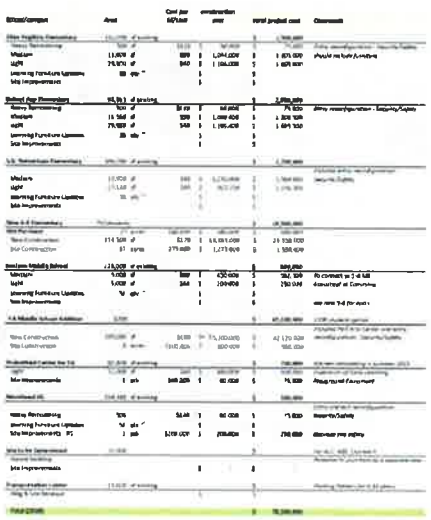
OPTION 2:

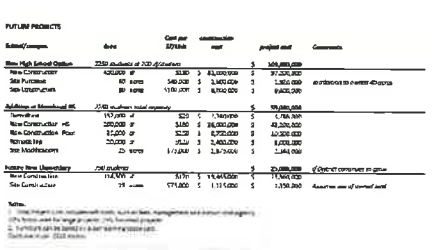
BUILD A MAJOR ADDITION TO REPLACE THE 1966 PORTION OF THE EXISTING FACILITY IN A PHASED APPROACH.

MAJOR ADDITION & REMODELING AT MOORHEAD HIGH SCHOOL
DESIGN CAPACITY: 2250 STUDENTS

PROJECTED COSTS

APPENDIX
FINAL PRESENTATION





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