St. Cloud School Board
Finance Committee

1000 44th Ave. N. Ste 100
St. Cloud, Minnesota 56301
Date April 25, 2016

To: Board of Education
From: Finance Committee: Al Dahlgren, Bruce Hentges,
Jerry Von Korff and James Newman

Purpose of Finance Committee Site Visit. On April 21, 2016, the Board finance committee, accompanied by architects, engineers, a general contractor recommended by the Central Minnesota Builders Association, District staff charged with maintenance of buildings and others, toured Technical High School. Our primary mission was to scrutinize the current state of the building to assess the magnitude of likely future maintenance requirements, and the potential for renovation of the existing structure. The committee did not focus on the potential for demolishing all (or most of) the Tech building on the current site and rebuilding new. This option was considered during the planning sessions with our architects from the Cunningham Group.

The tour highlighted several important principles:

- **The overarching issue facing the district is that the current Tech High facility impairs our ability to provide our students with a 21st century education.** The precise cost of attempting to renovate or repair the Tech facility to keep it operating is not the central issue. Whether it would cost $30 million, $50 million or double that, to squeeze out another decade from that facility, doing so would simply leave us with an inadequate facility and would amount to squandering public resources.
- **By any measure, the Tech facility has reached the end of its useful life as a high school.** Past boards, from 1938 through 1975 have endeavored to squeeze out every last dollar of the public's investment, by renovating, repairing, remodeling, and expanding outward and upward. The facility is supported by aging infrastructure, most of which does not meet modern codes. Faced with a choice of building new or renovating and remodeling, each time, past boards did the best they could with a challenging facility on a challenging location. Some areas have renovations on top of repeated renovations.
- **Very little of the facility is historic.** The vast majority of the outside of the facility consists of additions, extensions and expansions. Much of the historic appearance of the oldest part of school is, as one person exclaimed, one brick deep. Very little of the interior retains the old structure. The old gymnasium was converted to a media center. The old library was cut up into classrooms. The old swimming pool is covered with boards, an empty hole in the lower level. Interior walls and ceilings are generally not the original interior. Part of the building is an old vocational school facility that was merged into the high school. The west wing of the facility does not connect at ground level to the older facility, because municipal utility easements prevented building a contiguous high school.
- **The process of renovation, repurposing, remodeling resulted in a facility characterized by functional obsolescence that is challenging and costly to maintain.** Much of the infrastructure is non-code compliant. Old piping, electrical conduit and wiring, air handling and heating and other problematic infrastructure, complicates maintenance and would greatly increase the cost of renovation, because major changes

trigger the obligation to bring infrastructure up to code. This report does not recommend that the district attempt to calculate the exact cost of fixing that infrastructure, because it is so obviously a waste of public funds to attempt renovate or extend the life of the facility with repairs.

- **The Committee was told that when the existing boiler system fails, the District will be forced to replace not only the boilers, but also the heating infrastructure that the boilers serve and that the cost would be approximately $20 million[1].** In this single instance, this report recommends that we obtain further verification of the cost estimates and receive a report on the implications and possible alternatives for the school in the event that the boiler system fails. There are numerous other examples of potential costly repair issues, some discussed in this report, where the aging non-code compliant infrastructure create maintenance problems such that maintaining or renovating will be significantly more costly. An additional elevator is required and other costly ADA improvements will be required if the building were to renovated. There are stairwells built into the building structure that are today considered unsafe. A number of persons who joined us on the tour have construction, architectural, engineering experience. Nobody on the tour advocated that the district consider trying to save this old facility.
- **Because prior expansions occurred at a highly challenging site to save a very old original building with old infrastructure, past school boards have been forced time and time again to make major compromises in how the building is laid out.** Shop rooms designed for technical education of the past are being occupied by programs with very different design requirements. The music department is divided between the West and East wing so that instruments, pianos, rehearsal space, and modern technological support are divided amongst the two locations. The media center occupies a former gymnasium. Students with mobility concerns must navigate multiple stairways, elevators, and lifts, to get from the west building to the east, because the two buildings are separated by a municipal utility easement. The flow of student and adult traffic is not logical. The high school was built on a small site, and expansions have consumed some of the existing surrounding space.

Recommendation

This report recommends that the Board take the following steps regarding Technical High. This report does not deal with, nor does it make recommendations on, the configuration of replacement high school or schools. Our focus here is to emphasize the importance of prompt action.

- **Prompt Action to Replace Tech High with a New Facility.** The board should recognize that the Tech High School is at the end of its useful life as a high school and that the major structural and functional challenges of the facility make prompt action to build a replacement high school imperative.
- **Existing Facility is Functionally Obsolete: Spending Money on extending its life is a Waste of Public funds.** The board should recognize that seeking to continue operations

[1] Part of the $20 million in replacement cost for the old boilers/heating system is the requirement that when we undertake such significant work within the entire structure, we must also bring the building up to code with respect to its construction. This would mean that all wood structure – trusses, joists, and columns – be replaced along with any other wood used as blocking or framing. We would also have to establish location for and construction of fire walls within the building to separate the building into fire areas of approximately 58,000 – 60,000 square feet.

in the current building through major and costly renovations of the existing facility is impracticable and economically wasteful.

- **Calculation of the Precise Cost of Renovation is Not Required to Make our Decision to Build New.** Calculating the exact costs associated with repair or renovation is not required to make the decision to build a new high school, because the recommendations to build new coming from engineering, architectural and educational expertise is so clear. However, it may be that some of our citizens need further detailed information to verify that conclusion as part of efforts to engage the community after the board makes a decision. Any further professional work required to satisfy public skepticism should be based upon a judgment of what the community needs to verify the judgments that have been made by the Board.
- **Focus on Education** Replacement of Technical High should be driven by the educational needs of our students. The structure should support our educational mission and the major focus should be on supporting the educational needs of our community's children for the rest of this century.
- **Scrutinize Boiler-Heating Challenges:** Persons charged with boiler maintenance at Tech have emphasized their concern that a boiler or boilers may fail in the next several years. We understand that with the benefit of engineering consultation, there is the possibility that replacement of the boilers would trigger immediate replacement of the steam piping and other infrastructure that the boilers serve. The $20 million cost estimate is of major concern, not only because it is required to renovate, but also because delay increases that possibility that we would be forced to spend this money, and then build new anyway. The Board should receive a more detailed report on what is being done to prevent boiler failure until a new facility is built, and further detail on how the $20 million estimate was determined.

Further Discussion

Technical High School Layout

Technical High School was completed in 1917 at a time when designers could not anticipate the ultimate size of a high school serving what is now a 250 square mile school district. Tech is located on a site that cannot support athletic fields and does not provide adequate parking space. An appraiser would judge these problems as "external obsolescence[2]" impairing value for use as a modern high school. Space got even tighter when Tech was expanded twice before the 1960's A post-high school vocational facility, operated by the district, was located to the north, which eventually was integrated into the high school when those programs were moved to the site of the current Technical College.

The attached schematic of the high school layout shows the original 1917 construction at the lower right corner. The school was expanded towards the North in 1938. That expansion has undergone renovations and use changes described below. In 1955, the school was expanded into the upper right hand area of the diagram. When further expansions were required in the 1960's, contiguous expansion was barred by a municipal utility easement, and the school board decided to address that problem by building a separate facility to the west, connected by skyways and two tunnels. An additional floor was then added to the western building. The

[2] External obsolescence is a factor that reduces the value of an improvement because of something external to the property itself. It's not about whether the house is outdated or not, but rather something outside of the home that is causing a lower value. It's usually something that cannot be cured, at least without great expense.

result of this expansion was to create both external and internal functional obsolescence[3] in the school, some of which is described below. An upper boiler room was constructed in 1975 at the same time the high school expanded to the North.

The Tech Building Faces a Number of Costly Repairs

Tech is a century year old building (with major additions and renovations aged from 75 to 40 years old) that faces numerous costly repairs in the next few years should we attempt to extend its life or renovate. The largest repair involves the two boilers located at door 22 in the 1975 addition. These boilers have been nursed along with great care by our highly experienced boiler engineer. An internal team with assistance from outside mechanical engineers estimates the boiler replacement and repairs to piping and other infrastructure at $20 million. The people responsible for maintaining these boilers urge that the longer that we wait to replace Tech, the greater chance that we will be forced to replace these boilers at the very end of the school's useful life as a high school.

Tech has already experienced a number of structural problems which have forced, or will force, us to spend money which we would have rather invested in a new school. One example is containment and removal of asbestos in the library-resource room; another is imminent repairs at the Tech swimming pool facility. In the repeatedly remodeled 1917 wing of the high school, the Tour looked at an area near the restroom where the structural supports holding up the floor gave way unexpectedly. A structural engineer discovered that during past renovations, someone cut a hole for duct work and the installers forgot to put in a lintel to provide vertical support, and then tried to fix that error by putting in some horizontal piping. The pipe held up for many years, but eventually gave way and the floor above began to sag. There is a concern that further examples of subpar construction exist in this area. The cafeteria floor is experiencing unexplained heaving of its floor. There are numerous other examples, not atypical of a facility that has reached the end of its useful life.

Old or ancient infrastructure creates costly complications when renovation, repair, or remodeling is required. We were shown numerous examples of electrical, heating, air handling and other infrastructure where repairs or renovations are extraordinarily costly because the old infrastructure violates current building codes. A repair or renovation sets off a domino effect in which the district is required not only to do the work that we must do, but which forces us to make costly additional repairs to bring related infrastructure into code compliance. Hidden features of the old renovations can increase the risk that a project will be more complicated or costly than anticipated. Air ducts throughout the facility lack currently required air handling capacity, or are entirely out of code compliance. There are pipes jacketed by asbestos, pipes which must be replaced because they are nearing the end of their useful life; electrical circuit breaker boxes for which replacement parts are no longer manufactured. Replacement of the boxes will force replacement of conduit and the wiring which leads to the replaced electrical box. In one area, there are wooden joists and wooden roofing which must be replaced if renovations or repairs are made to the infrastructure below, and in some cases replacement structure would require installation of vertical beam support running from ground to roof. We were told that the boiler repairs described above would require replacement of steam heat by water, and the consequent cascading replacement of pipes that serve the boilers.

[3] Functional Obsolescence means: "A reduction in the usefulness or desirability of a facility because of an outdated design feature, usually one that cannot be easily changed."

A representative of ICS Consulting – facilities planners, wrote the following comments after joining us on the tour:

> *The facility is a product of many decades of "reactive" renovation which has resulted in a very disconnected and disjointed facility. It is possible to "re-create" a new 21st Century Tech HS on the current site, but this strategy would result in more overall cost, difficult and disruptive phasing, added complexity, and would still be saddled with inherent limitations and compromise due to site constraints and other factors.*
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> *Extensive infra-structure issues exist including heating, ventilation, electrical, and plumbing systems. Significant educational space adjacency issues throughout the various vintages of the facility limiting the ability to appropriately organize curricular departments due to space constraints.*
>
> *Major circulation, way-finding, occupant flow, and accessibility issues leading to excessive passing times and lost instructional time.*
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> *Varying structural systems (including extensive areas of wood structure) within the various vintages of the facility resulting in added complexity and costs associated with any major renovations and/or improvement project.*
>
> *Grossly limited 8 acre site resulting in inadequate parking, poor access, and limited green/activity space. Rigid building configuration resulting in the inability to readily re-organize to facilitate/enable 21st Century flexible learning communities and opportunities.*

An architect who has worked with the District for many years on school issues wrote:

> *Bearing wall construction severely limits the ability to re-organize to facilitate/enable 21st century flexible learning communities and opportunities without significant demolition and reconstruction.*
>
> *Although it is theoretically possible to create a new 21st century tech high school on the current site, this strategy would require acquiring additional property, relocation of existing major city utilities, demolition of a significant portion of the existing building, major demolition and reconstruction of the existing facility to remain. That would require additional phasing (and years) to accomplish without disruption of instructional time. Even so, the site would still have many of the inherent limitations and compromises due to site constraints.*

School Buildings Should Serve 21st Century Educational Purpose. Most of our discussion on this tour focused on the economic (cost) and structural issues posed by attempting to renovate and maintain the Tech facility. However, the committee members and others all expressed the firm belief that schools need to be evaluated first and foremost based on whether they serve our current educational mission effectively. The architects and engineers who advised the district, and the academic leadership of the district, have all advised that the Tech facility is no longer suitable to serve our educational mission and that it cannot be cost effectively renovated to meet

our educational goals. As we consider the cost of renovation and maintaining Tech, it is important to recognize that if we were to invest the tens of millions necessary simply to keep the building functioning exactly as it is, or the many more millions of dollars necessary to renovate the existing building, the public and taxpayers would still be left structures from 40 to 100 years old, with major functional deficits. We would still left with a building design which was the product of construction compromises needed to expand an old building into a difficult space. We would be left with a facility that is not suitable to support the mission of a great district and community.

Tech Composed of Multiple additions and Numerous Renovations. As stated above the Tech building is not a simple aged high school structure. Over the years, in an effort to avoid building a new high school, the school district has repeatedly implemented additions, renovations, and major alterations in the use of existing space. There is very little left of the original high school inside the historic external walls. Large portions of the building have been gutted, rebuilt or repurposed. Thus, proposals to "renovate" Tech are not near as simple as they sound: as the District sought to accommodate changing student populations and changing educational needs at the original 1917 site, it was forced to make major structural and architectural compromises. Examples include:

- The inside of the original 1917 building has been remodeled numerous times. This remodeling and restructuring has created structural complications that would make further renovation and continued maintenance more costly and complicated.
- The 1938 addition no longer displays the internal walls, floors and ceilings of that old addition. In other words, the insides of the 1938 addition are in no sense historic.
- The current resource (media-library) center has given up space to classrooms, space that previously housed books and study tables. The resource center is actually the old gymnasium, a room that now has artificially lowered ceilings. The upper level of the resource center now is filled with rows of desks, each with a PC and monitor which the school calls the computer lab, but which is really an open space filled with desks and computers.
- The original library was carved up with new internal walls to create new classrooms. Windows from that original library were not removed, and they remain in the outside walls, but hidden above the lowered ceilings.
- Shop rooms have been repurposed from past CTE-vocational functions for which they were designed (e.g., agricultural studies and automotive studies) to new functions for which they are not designed (e.g. robotics, and the MARS robotic simulation room). One former shop was repurposed to the gymnastic room, but the room does not meet competition standards, requiring the teams to use the facilities at Cathedral High School for competitions.
- There are rooms where students have to walk through one class to get to another.
- The new gymnasium had a flooring surface that needed to be replaced, but the district decided to lay new flooring on top of the old because of the excessive cost to remove the sub-flooring which had to be shipped out of state for disposal. The new flooring is now starting to experience difficulties, which will likely require removal and replacement.
- The result of these numerous additions and renovations has been to create a building that doesn't integrate properly, where student traffic flows illogically, and where some departments that should be co-located are separated from each other.
- The media space – the former gymnasium, does not feel, look, or function like a modern study space that easily accommodates the new technologies that support research and learning.

- The result of some renovations is that some spaces don't meet modern air handling and ventilation standards.

What Should We Do?

We asked the Central Minnesota Builders Association to send a representative to accompany us. At the end of the tour he urged us to focus on the educational needs of our community and our children. If we maintain that focus, it is impossible to justify further efforts to make the Tech High building work. David Meyers, who has a substantial construction law practice, said that we ought to provide the engineers and others who are keeping Tech high running with old outmoded infrastructure a medal. "I don't know why they don't just up and quit: you are asking them to maintain old worn out equipment with old infrastructure that is out of date."

Everything we saw and heard confirms the Board's decision to replace Technical High School with a new facility. The decision to replace with a new building was sound: the issue is how we go about engaging our community to provide them the information that they need to understand why.

The estimated future costs of maintaining Technical High School into the future became elevated in the campaign debate. One of the difficulties with that hypothetical debate is that these costs are simply out of proportion to the condition of the building. It defies common sense that we would be forced to spend even $20 million – the estimated cost of replacement boilers and all of the consequent expenditures required to bring heating, air handling, etc, into code compliance. Instead of trying to estimate the cost of maintaining a building beyond its useful life, we need to explain that we've reached the point where investing tens of millions into a very old functionally obsolete school building, is irresponsible, and the longer we take to launch a replacement facility, the more money that we are going to be wasting.

If we move forward, we may learn that there is a segment of our community that needs further proof that our judgment that Technical High School is beyond renovation and repair. That's not an indication that we made the wrong decision or that we made the decision based on flawed information. That's an indication that we need to work harder to provide the information that skeptics in the community may need to understand. We should do that by engagement, by subjecting this information to scrutiny, by seeking support from trusted members of the construction community, respected local architects, general contractors, and others who can apply common sense to this problem. It is highly unlikely that persons with construction experience who care about this community could visit the Technical High School facility and thereafter urge the board and taxpayers to support efforts to pay for its continuation through annual repairs or major renovations.

Committee member Dahlgren pointed out that all of this needs to be driven by educational vision. Our educational professionals, led by the Superintendent, must explain why a new facility is essential to provide a 21st century education and why we have a plan to provide a first class college preparatory and career and technical education in that new facility.

Concluding Remarks regarding the Finance Committee's Fiduciary Responsibility

The Finance Committee is not charged with conducting a referendum campaign. Our mission is described as follows:

The general purpose of the Finance and Audit Committee is to serve as an advisor or sounding board to the Superintendent for business issues that require special expertise that is not within the traditional purview of educators (real estate, bonding, construction, etc.) and to serve as the Board's watchdog to assure fiscal sustainability and to help the Board understand the long term financial consequences of its actions

We have a trust responsibility to assure ourselves that major real estate, bonding and construction decisions are made based on solid advice and solid data. The tour was an opportunity for the committee to revisit the issues related to possible renovation or remodeling of the Tech Facility. Finance Committee members had an opportunity to visit with engineers, consultants and architects during this tour. Drafts of this report were shared with those professionals, to give them an opportunity to offer corrections or additional information, and in two cases, we have inserted direct quotations from those professionals.

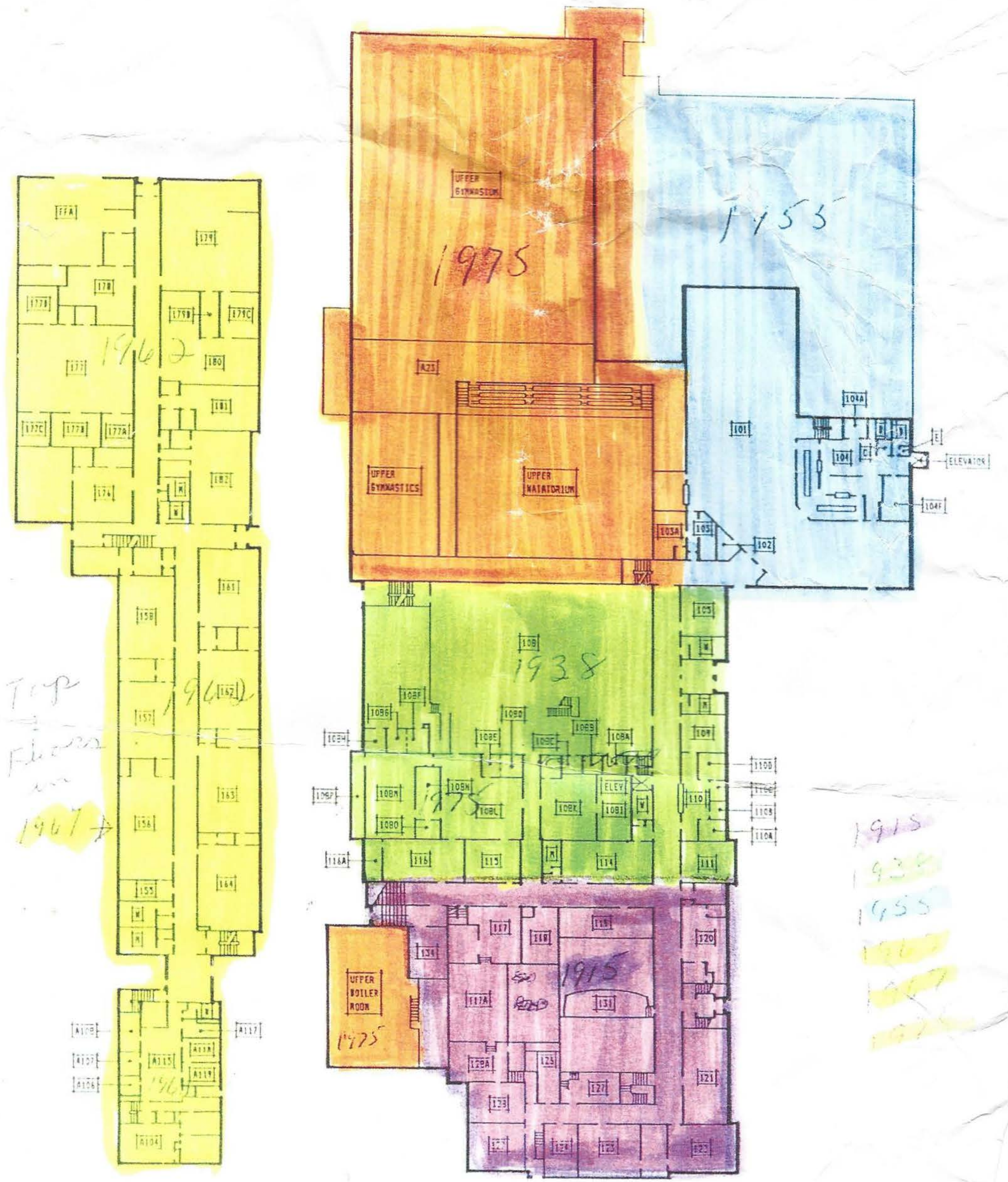
Our work was not intended to supplant the community engagement responsibilities of the superintendent or others charged with assuring community leaders and citizens that our decisions are sound. If members of the community need further study, or additional data, or additional professional advice, to develop confidence in the Board's coming decision, then that work should be done as part of creating public confidence. **If the business community, or parents, teachers, or other stakeholders feel that they need further information or advice before they support the board's decision, nothing in this report is intended to prevent that from happening.** The thrust of this report is to confirm the board's decision against trying to extend the life of the existing facility, through renovation or extensive remodeling. If important constituencies need further information to verify that decision, the district should respond to those concerns, but this report is advising that we have enough information to support the conclusion that we must build new.

Tour Attendees

James Newman	Citizen member, Board Finance Committee—(Administrative Director, Department of Education, St. Cloud State University
Al Dahlgren	Board Finance Committee
Bruce Hentges	Board Finance Committee
Jerry Von Korff	Board Finance Committee Chair
Kevin Januszewski	Board Finance Committee
Willie Jett	Superintendent

Bryan Brown	Buildings & Grounds Supervisor
Dave Thompson	Tech Head Engineer
Charlie Eisenreich	Tech Principal
Dale Gruber	Dale Gruber Construction
John Pflueger	Cunningham Group
Bernie Eikmeier	ICS Consulting (School design planning)
Andy Faulkner	ICS Consulting
Pat Overom	ICS Consulting

Henry	Gruber	Hank's Hauser
David	Leapaldt	Senior Architect & Project Manager, IIW


UPPER GYMNASIUM
1975
1955
A23
UPPER GYMNASTICS
UPPER NATATORIUM
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104A
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104F
ELEVATOR
1938
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108F
1086
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108G
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103H
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108M
108L
1080
108K
108I
ELEV
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UPPER BOILER ROOM
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128A
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177C
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Top 3 Floors in 1967
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1962
1967
1975