



Gavin Central Elementary School

Observations related to Annual Roof Truss Inspection by Legat Architects

Date: March 27, 2012

Time: 8:00 a.m. – 6:00 p.m.

On-Site during Inspection:

Ted Haug; Legat Architects

3 Associates; Legat Architects

John Sfura; Wiss, Janney, Elstner Associates

Ralph Schmidt; Lake County ROE, Structural Consultant

Dr. John Barbini; Lake County ROE (At start of Inspection)

John Frase; Lake County ROE (At start of Inspection)

Steve Wright; DLA Architects

During the course of the Truss Inspection performed by Legat Architects, 7 breaks (considered as Structural Breaks); consisting of three full chord fractures and four partial chord fractures were found.

There were other wood related items found that were identified by DLA Architects; pointed out to Wiss, Janney, Elstner Associates as well as Ralph Schmidt for review.

The suggested corrective work for the trusses will be presented by Wiss, Janney, Elstner Associates (WJE) through Legat Architects under separate cover.

The following is a list trusses exhibiting breaks of various types of breaks as noted on the day of the Annual Inspection. The following photographs detail the type and location of break as noted on March 27, 2012.

Total Count of Trusses Reviewed by Module

TRUSSES REVIEWED

BREAKS OBSERVED

Module A: 22 Trusses

3 Partial / 22 Trusses = 13.7%

Module B: 7 Trusses

1 Break / 7 Trusses = 14%

Module C: 23 Trusses

3 Partial / 23 Trusses = 13.0%

Total 52 Trusses

7 Partial / 52 Trusses = 13.5%

MODULE A: Breaks

- **Module A: Truss #17 – Full Diagonal Chord Fracture; North side of Catwalk**
WJE has reviewed and will be developing a fix

It was noted in the field that a break of this type has not been documented in the past and has not been the typical type of break seen in other observations of the trusses.

It was also noted in the field that this truss had been marked with tag indicating that this truss has been observed and marked for repair on 1/9/2006.

- **Module A: Truss #83 – Partial Diagonal Chord Fracture- through knot; North side of Catwalk**
WJE has reviewed and will be developing a fix
- **Module A: Truss #88 – Full Top Chord Fracture; South side of Catwalk**
WJE has reviewed and will be developing a fix

It was noted in the field that a break of this type has not been documented in the past and has not been the typical type of break seen in other observations of the trusses.

MODULE A: Additional Items for Review

- **Module A: Trusses #32 & #33 – Full Vertical Split from Spike Plate to Spike Plate**
Approximately 8'-0" long; South side of Catwalk
WJE has reviewed and will be developing a fix (Add plate both sides)
- **Module A: Trusses #58 & #59 – Horizontal Checks Approximately 6'-0" long; North side of Catwalk** **Appears to be Juvenal Wood**
WJE has reviewed and will be developing a fix (Add plate both sides)

It was noted in the field that the development of the check is within 6" of hanger for piping or mechanical equipment below truss.

MODULE B: Breaks

- **Module B: Truss #B6-8 – Partial Bottom Chord Fracture – Partial Vertical Break;**
WJE has reviewed and will be developing a fix

It was noted in the field that for the most part, a break of this type has not been documented in the past in this area of the building.

MODULE C: Breaks

- **Module C: Truss #3 – Full Bottom Chord Fracture – Complete Vertical Break; Directly at the center of Building**
WJE has reviewed and will be developing a fix
- **Module C: Truss #30 – Partial Top Chord Fracture; North side of Catwalk**
WJE has reviewed and will be developing a fix

It was noted in the field that a break of this type has not been documented in the past and has not been the typical type of break seen in other observations of the trusses.

MODULE C: Additional Items for Review

- **Module C: Trusses #14 – Partial Diagonal Chord Fracture - near Catwalk; Break occurs at horizontal bridging**
WJE has reviewed and will be developing a fix (Add plate both sides)

MODULE A: Additional Items for Review by WJE and Ralph Schmidt

- **Module A: Trusses #8 – Construction Scar at the time of original construction**
Reviewed by Ralph Schmidt and WJE and determined to Not be Worthy of Attention
- **Module A: Trusses #20 – Longitudinal Check on Diagonal**
Reviewed by Ralph Schmidt and WJE and determined to Not be Worthy of Attention
- **Module A: Trusses #30 – Longitudinal Checks on Diagonal**
Reviewed by Ralph Schmidt and WJE and determined to Not be Worthy of Attention
- **Module A: Trusses #78 – Longitudinal Checks on Diagonal**
Reviewed by Ralph Schmidt and WJE and determined to Not be Worthy of Attention
- **Module C: Trusses #86 - #88 – Season Check on Diagonal Member between Trusses**
Reviewed by Ralph Schmidt and WJE. Determined replacement of the diagonals would be the simplest correction instead of mending the existing material.

It was noted in the field that material used for the diagonal bracing was installed at original fix of building in 2006.

Miscellaneous Comments:

- **Module A: Trusses #75 - #76– Foot Hole Damage; 6' North of Catwalk**
There has been damage caused by a foot slipping off a truss and going through the drywall and insulation. Drywall must be re-established, insulation cleaned up from on top of ceiling tiles and re-distributed in attic space.
- **Module C: Drywall Debris and Ceiling Tile Debris**
There are sections of drywall and ceiling tile debris that have been left in the attic space from earlier repair jobs. Extra material needs to be removed from the attic space.

Observations:

The conditions of each break are to be reviewed and repair details developed by Wiss, Janney, Elstner under separate cover.

There are numerous locations where longitudinal seasoning checks exist in horizontal bottom chord members of the trusses. These locations were pointed out to WJE and Ralph Schmidt and both indicated that there was no structural concern and no action was required at this time.

DLA Observations and Recommendations:

As mentioned during last year's review and report, during the normal course of review of the bottom chords of the trusses, it is necessary to displace the blown-in insulation between the trusses in order to observe the bottom chords. The displacement of insulation creates various mounds of insulation and has the appearance of hills and valleys in the insulated attic space being observed. ***In order to better maintain an evenly insulated attic, it is recommended that the insulation be raked or respread in an even manner and to a level consistency throughout the attic space once the inspection has been completed.***

A rake or some other leveling device could be used to level out the affected insulation at the time when contractors are in the attic for required repair work.

Extra Materials in Attic Space

It is recommended that all unused (extra) materials present in the attic space be removed upon completion of all truss fixes. It is a hazard to have extra material lying around while trying to maneuver through the trusses. Most material is of the size that it could be easily removed from the attic to make future observations more readily accessible.



- **Module A: Truss #17 – Full Diagonal Chord Fracture; North side of Catwalk**
WJE has reviewed and will be developing a fix



It was noted in the field that a break of this type has not been documented in the past and has not been the typical type of break seen in other observations of the trusses.

It was also noted in the field that this truss had been marked with tag indicating that this truss has been observed and marked for repair on 1/9/2006.



- ***Module A: Truss #83 – Partial Diagonal Chord Fracture- through knot; North side of Catwalk***





- **Module A: Truss #88 – Full Top Chord Fracture; South side of Catwalk**
WJE has reviewed and will be developing a fix

It was noted in the field that a break of this type has not been documented in the past and has not been the typical type of break seen in other observations of the trusses.





- **Module A: Trusses #32 & #33 – Full Vertical Split from Spike Plate to Spike Plate
Approximately 8'-0" long; South side of Catwalk
WJE has reviewed and will be developing a fix (Add plate both sides)**



- **Module A: Trusses #58 & #59 – Horizontal Checks Approximately 6-0” long; North side of Catwalk Appears to be Juvenile Wood**
WJE has reviewed and will be developing a fix (Add plate both sides)

It was noted in the field that the development of the check is within 6” of hanger for piping or mechanical equipment below truss.



- **Module B: Truss #B6-8 – Partial Bottom Chord Fracture – Partial Vertical Break;**
WJE has reviewed and will be developing a fix

It was noted in the field that for the most part, a break of this type has not been documented in the past in this area of the building.



- **Module C: Truss #3 – Full Bottom Chord Fracture – Complete Vertical Break;**
Directly at the center of Building
WJE has reviewed and will be developing a fix



- **Module C: Truss #30 – Partial Top Chord Fracture; North side of Catwalk**
WJE has reviewed and will be developing a fix

It was noted in the field that a break of this type has not been documented in the past and has not been the typical type of break seen in other observations of the trusses.





- **Module A: Trusses #8 – Construction Scar at the time of original construction**
Reviewed by Ralph Schmidt and WJE and determined to Not be Worthy of Attention



- **Module A: Trusses #20 – Longitudinal Check on Diagonal**
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- **Module A: Trusses #78 – Longitudinal Checks on Diagonal**
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- **Module C: Trusses #86 - #88 – Season Check on Diagonal Member between Trusses**
Reviewed by Ralph Schmidt and WJE. Determined replacement of the diagonals would be the simplest correction instead of mending the existing material.

It was noted in the field that material used for the diagonal bracing was installed at original fix of building.



- **Module C: Trusses #86 - #88 – Season Check on Diagonal Member between Trusses**
Reviewed by Ralph Schmidt and WJE. Determined replacement of the diagonals would be the simplest correction instead of mending the existing material.

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- **Module C: Drywall Debris and Ceiling Tile Debris**
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