

St. Joseph Catholic Church
409 S Bridge Street, Belding, MI 48809

STAINED GLASS ASSESSMENT

January 4, 2018



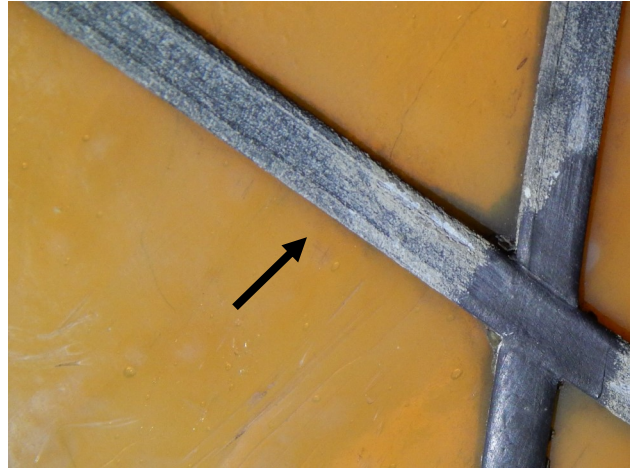
Kolenda
Art Glass

OBSERVATIONS:

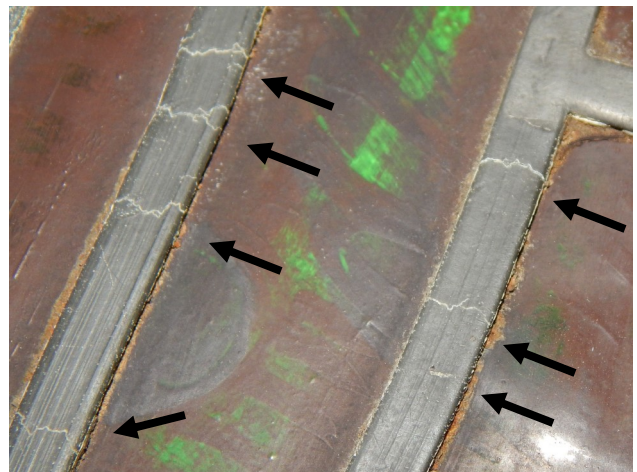
Style and technique: Promotional material from the Munich of Chicago Stained Glass Studio, ca. 1920, suggest they designed and fabricated a portion or all the windows at St. Joseph. The fully painted figure windows in the apse and nave are of traditional Munich style while the others in the collection are more modest geometric with a few painted elements.

Installation: Set from the interior with wood stop. Some panels have original functional steel vent frames while the nave windows have had these replaced with modern aluminum vent frames. Original glass was trimmed and removed to accommodate the bulkier new frames which likely included a signature pane in the lower right corner of each set of windows.

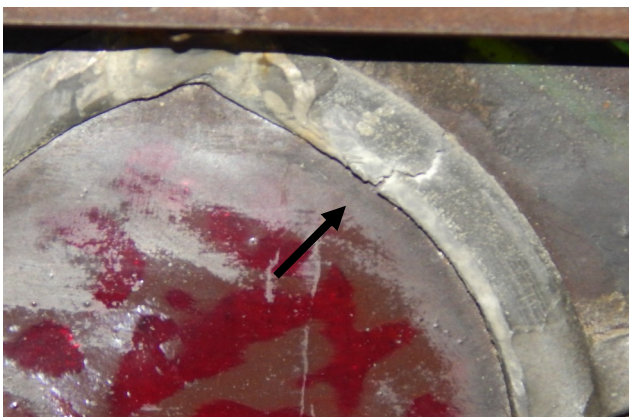
Lead: Lead matrix consists of various sized flat came. All windows show signs of moderate to severe oxidation particularly on the exterior side. Lead failure is widespread throughout the Munich windows on the south elevation requiring major to complete replacement. Currently the panels are flat and do not show signs of structural failure. Munich windows have stronger “tucked” joints compared to the others and this technique should be repeated when any repair work is conducted.



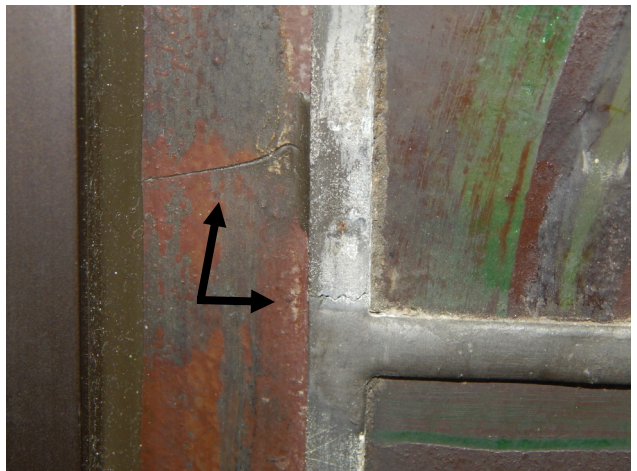
Severe oxidation can be found on the interior and exterior of the windows especially the north elevation



Hairline cracks in the lead matrix are widespread among the panels on the south elevation



Major fractures in the lead suggest the “heart” of the channel is compromised which is the most crucial structural element of a window



Fractured lead can create hinge points and allow excessive movement leading to broken glass

Cement: Leadlight cement has never been serviced since original installation. Not weather tight and no longer supporting the structure. It's extremely dry and brittle allowing it to siphon water that develops on the exterior surface. The burnished lead of the Munich windows has helped retain most of the cement exceptionally well.

Frames/Sashes: Exterior of frames were not inspected due to fogged over glazing and lack of access. Interior sides look to be well maintained. Caulk has been applied between interior wood trim and glass potentially in an attempt to combat air infiltration.

Glass: Munich windows are fabricated with German mouth blown antique with traditional vitreous paint fired on the surface. No painted glass requiring complete recreation or replacement was discovered during this survey. Geometric windows are made of a combination of domestic opalescent and cathedral glass with painted borders, symbols and donor names. Many fractures throughout entire collection. Silicone caulk has been used widespread on interior surface of broken glass.



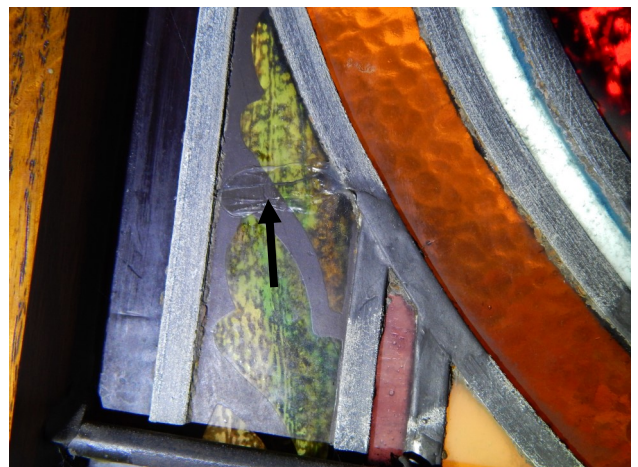
Glazing compound around vents is cracked and becoming dislodged which could allow air infiltration and movement in the stained glass



Original painted glass has been trimmed and removed to accommodate modern aluminum vent sashes,



Poor replacement glass and deformed lead can be found on the narthex transom window



Fractured glass can be found throughout the entire collection, some with silicone smeared over top

Exterior Glazing: Polycarbonate sheeting separated by aluminum “T” with snap-in stops. No ventilation to allow air movement or weep holes at the bottom for condensation to exhaust through. Sheeting has developed strong foggy haze which is unattractive and exaggerates the negative effects associated with a sealed system such as this.

Support System: The painted windows in the nave have steel rods fixed by copper wire soldered to the leads and twisted around the bars. Other geometric windows have visibly rusty flat, steel bars soldered direct to the matrix. Both systems appear to be functioning correctly with exception of a couple broken wire ties in the nave. The panels in the aluminum vent frames have had the original round supports removed and replaced with flat bar. These supports are not located in their original positions.



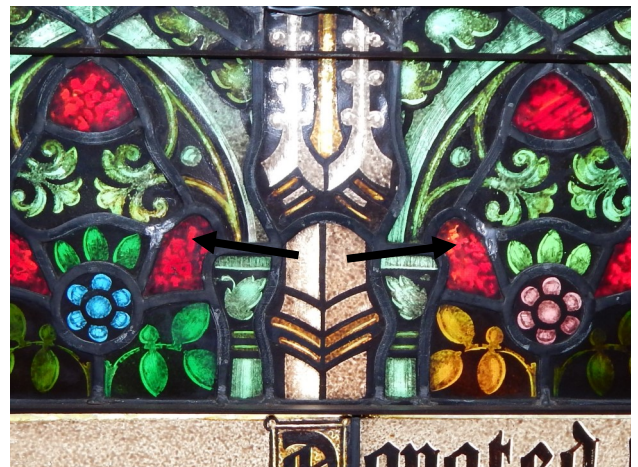
Flat bars on geometric windows are not soldered on the under side and show signs of surface rust



Polycarbonate sheeting clouding over which traps heat and condensation buildup



Exterior glazing has no ventilation or weep system which will trap condensation and put lateral pressure on the stained glass as the heated air space expands



Signs of old solder joints holding the original structural supports that have been relocated

Recommended Action

All existing polycarbonate protective glazing should be replaced with new material not prone to fogging over such as acrylic or laminated safety glass. Glazing should be properly vented top and bottom with a weep system at the bottom to allow water to escape. If new glazing material is not in the current budget the existing polycarbonate sheeting should be drilled to accept venting and weep holes in the bottom frame rail to halt the accelerated deterioration of the windows and framework.

Remove Munich windows on the south and west elevation (1-10) and replace 80-100% of lead matrix. Replacement lead should be of exact size and shape as the original and rebuilt with “tucked” joints consistent with the original construction. All fractured glass should be retained and mended with copper foil or edge glued with two part silicone. Windows should be cemented on both sides with traditional leadlight cement. Replace/restore all structural components and reinstall consistent with the original design. Currently flat, these windows could begin deflecting in the next 5-10 years potentially leading to broken glass at vulnerable hinge points.

Remaining windows (11-21) should be cemented in situ on exterior surface to restore the water repellency and structural integrity of the leadlight cement. White oxidation on the lead should also be mechanically removed at this time to restore the naturally protective black oxide finish on the lead surface. Caulking and glazing should be replaced as needed. Cementing these windows in the near future could prolong the life of the lead matrix which will delay the need to excavate them for lead replacement.

While the interiors of the windows appear to have been well maintained the windows could benefit from a thorough steam cleaning to restore intended light transmission.

Window Key

