



CONSTGLASS



Data sheet for pilot objects

**VITROCENTRE
ROMONT**
CENTRE SUISSE DE RECHERCHE
SUR LE VITRAIL ET LES ARTS DU VERRE

Object: REF. PARISH CHURCH, TEST - GLASS **Date:** 12.01.2009

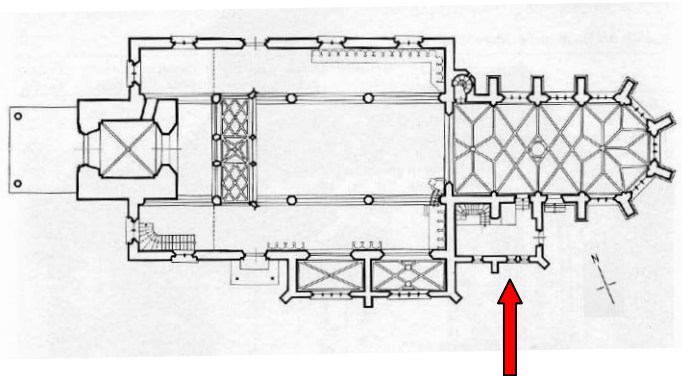
OBJECT IDENTIFICATION

Site Burgdorf BE (Switzerland)

Building Ref. Parish Church

Location and orientation of the window Vestry south of the choir

Plan of the building



Description of the window opening (dimensions, number of lights; photo, test panel marked)



Panel of fragments
Total height: ca. 79 cm
Total width: ca. 40 cm

The panels have been installed in the sacristy about in 1971.

Date Panel of fragments: 1st decade of 16th century



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Short description of the window (identification of subject, artist, workshop)	The original window of the late 15 th or early 16 th century has been destroyed by a hailstorm in 1707. The fragments of the panel have been found in 1968 behind the choir stalls. Konrad Vetter mounted the fragments in 1971 for the vestry.
Owner	Ref. parish church of Burgdorf
Person(s) in charge	Vitrocentre Romont, Stefan Trümpler / Aline Dold
Investigated panel (inventory number CVMA number, size)	

Manufacturing technique	unpainted glazing	<input type="checkbox"/>
	painting glazing	<input checked="" type="checkbox"/>
	oxide paint / grisaille paint inside	<input checked="" type="checkbox"/>
	oxide paint / grisaille paint outside	<input checked="" type="checkbox"/>
	silver stain inside	<input type="checkbox"/>
	silver stain outside	<input checked="" type="checkbox"/>
	transparent enamel inside	<input type="checkbox"/>
	transparent enamel outside	<input type="checkbox"/>
	flushed glass relief	<input type="checkbox"/>
	
<i>Further information:</i>		



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ENVIRONMENT IN SITU / IN STORAGE

Protective glazing

no protective glazing		<input type="checkbox"/>
protective glazing		<input checked="" type="checkbox"/>
	installed in the original position of the ancient panels	<input checked="" type="checkbox"/>
	mounted to the outside (ancient panels stay in their original position)	<input type="checkbox"/>
	no ventilation	<input checked="" type="checkbox"/>
	internal ventilation	<input type="checkbox"/>
	external ventilation	<input type="checkbox"/>
	size of interspace between ancient panel and protective glazing	ca. 4 cm
	ventilation slot at the top (size)	cm
	ventilation slot at the bottom (size)	cm
	date of installation	ca. 1971




Further information:

No data logger is necessary for this case.

There is no ventilation between the protective glazing and the panel, but there may have been a slight air exchange through the framing and the leaded panel.

Clear evidence for thermal damage due to the double-glazing.

Influence of acid from the oak frames is highly probable in the interspaces.

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Material protective glazing	Transparent float glass
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Surround materials and construction related materials	<p>The building material is sandstone.</p> <p>Around the panel: Oak-timber frame with saddle bars.</p> <p>On the fragment panel we found some blurs of white paint (could be wall paint).</p>
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Museal exposition / Storage	Room	<input checked="" type="checkbox"/>
	Cabinet	<input type="checkbox"/>
	Store	<input type="checkbox"/>
	<i>Further information:</i> The vestry is a small room of about 25 square meters with a carpet. Two artificial warm light lamps (filament lamps) on the walls, one of them between the test panels, about 100cm distance.	

Objects exposed to	partial sunlight	<input checked="" type="checkbox"/>
	daylight, but no direct sunlight	<input type="checkbox"/>
	artificial warmlight	<input checked="" type="checkbox"/>
	artificial coldlight	<input type="checkbox"/>
	mixed warm-/coldlight	<input type="checkbox"/>
	<i>Note:</i> Filament lamps	



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Climate of the building

The climate in the vestry of the parish church is rather humid and moderately heated. The wall shows signs of humidity, at some places the wall plaster is peeling off. Occasionally, condensation occurs in the inter space of the glazing, leaving marks on the window frames. (Pict. 2).

On the day of the removal, 7th November 2007, the temperature was 14 °C / 57%rh (inside-), 10 °C / 80%rh (outside the sacristy).






Picture 1



Picture 2

Further information / observations: records of previously collected data, for example

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INSPECTION OF THE SITE BEFORE REMOVAL (WITH PICTURES)

Requirements for a safe removal in respect of minimal intervention

The object has been transported horizontally and has not been touched at any time on its surface.

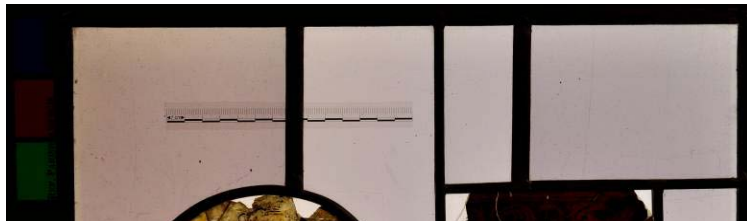
The window level is about 130 cm off the ground.

Environmental causes for damage

The panel is slightly bending due to heat dilatation. A small timber wedge had been applied under the lower lead bar, which caused a deformation of the panel.

The objects are exposed to UV-Light, through a 3mm-float glass.

Around the fragments, K. Vetter used some glass colored with manganese. This glass has changed color (to violet), according to its exposure to UV. The upper border, which has certainly less sunlight, is less affected.





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Short report of removal



The panel was fixed in a timber frame with wooden strips.

For an easy removal, the front frame holding the protective glazing was fixed with two screws. The wooden strips around the glass panel were fixed with nails.

Two iron bars are fixed on the outside of the panel.

There is sawdust in the inter space.



Outside of the protective glazing, protective ferramenta.

Short report of transport

The objects have been transported in a timber frame with Styrofoam and neutral cotton/molton tissue.



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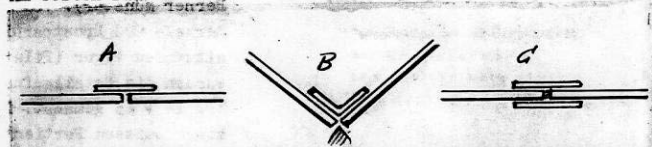

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CONSERVATION MATERIAL

Conservation material (producer, product name, characterization, data, etc.)	Araldite® binder AY103 by 100 parts, hardener HY951 by 9 parts (Astorit AG 8840 Einsiedeln). Hardening at 22 °C during 24h.	
Purpose of use	consolidation of paint layer / paint pigments	<input type="checkbox"/>
	coating / lamination / doubling	<input checked="" type="checkbox"/>
	edge bonding	<input checked="" type="checkbox"/>
	
	
	
Application technique	application with brush	<input type="checkbox"/>
	application with spray	<input type="checkbox"/>
	single application	<input checked="" type="checkbox"/>
	repeated application	yes
	concentration	%
	mixing ration of Araldite® AY103 / HY951	100:9
	
	
<p><i>Further information :</i></p> <p>According to documents of Konrad Vetter, the fragments have probably been thoroughly cleaned, especially on the unpainted backside. Single fractures were scotch taped on the painted surface (A). Then the crack was opened for inserting the Araldite® (B). The remaining Araldite® was removed with acetone.</p>		



	<p><u>Sicherung der Sprünge bei ausgebleiten Stücken:</u> Am besten laut Skizze:</p>  <p>For thin fragments (1-1.5mm) with multiple fractures, the simple edge bonding was not considered to be sufficient. The doubling method was used. A thin carrier glass was cut and sometimes reheated in a plaster mould taken from the original fragment. Araldite® was poured on the carrier glass, the fragment was then put on top and left under pressure with a weight, for 24 hours/22 °C. The resin coming out all around the doubled glass has been removed with a sharp blade after 6-7 hours.</p>  <p>original glass araldite carrier glass</p>	
<p>Date of application</p>	<p>About 1971</p>	
<p>Documentation of this treatment</p>	<p>photographs (colour transparencies, b&w prints, colour prints, digital images)</p>	<p><input checked="" type="checkbox"/></p>
	<p>written records</p>	<p><input checked="" type="checkbox"/></p>
	<p>diagrams</p>	<p><input type="checkbox"/></p>
	<p>data-files</p>	<p><input type="checkbox"/></p>
	<p>.....</p>	
	<p>.....</p>	
	<p><i>Further information:</i> The written records of the methods used by the restorer K. Vetter are kept in the archives of the Vitrocentre and are analyzed for the project. Oral recordings are also be available</p>	

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	The (identical) treatment of the second panel has been documented with photographs in 1971							
	Do you think this documentation is	<table border="1"> <tr> <td>Exact</td> <td><input type="checkbox"/></td> </tr> <tr> <td>more or less reliable</td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Exact	<input type="checkbox"/>	more or less reliable	<input checked="" type="checkbox"/>		
Exact	<input type="checkbox"/>							
more or less reliable	<input checked="" type="checkbox"/>							
Previous restorations (data, treatments, material)	.							
	Do you think the information is	<table border="1"> <tr> <td>exact</td> <td><input type="checkbox"/></td> </tr> <tr> <td>more or less reliable</td> <td><input type="checkbox"/></td> </tr> <tr> <td>hearsay</td> <td><input type="checkbox"/></td> </tr> </table>	exact	<input type="checkbox"/>	more or less reliable	<input type="checkbox"/>	hearsay	<input type="checkbox"/>
	exact	<input type="checkbox"/>						
more or less reliable	<input type="checkbox"/>							
hearsay	<input type="checkbox"/>							



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CONDITION REPORT / DOCUMENTATION IN THE WORKSHOP

**Pictures of panel /
glass in transmitted
light**

**Lighting: Fluorescent tube inside the workbench (Lumilux Daylight).
All digital photos in this data sheet : Nikon D-90**





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**Pictures of panel /
glass in reflecting and
raking light, internal
and external surface**



Pictures of panel in reflecting and raking light, internal surface.



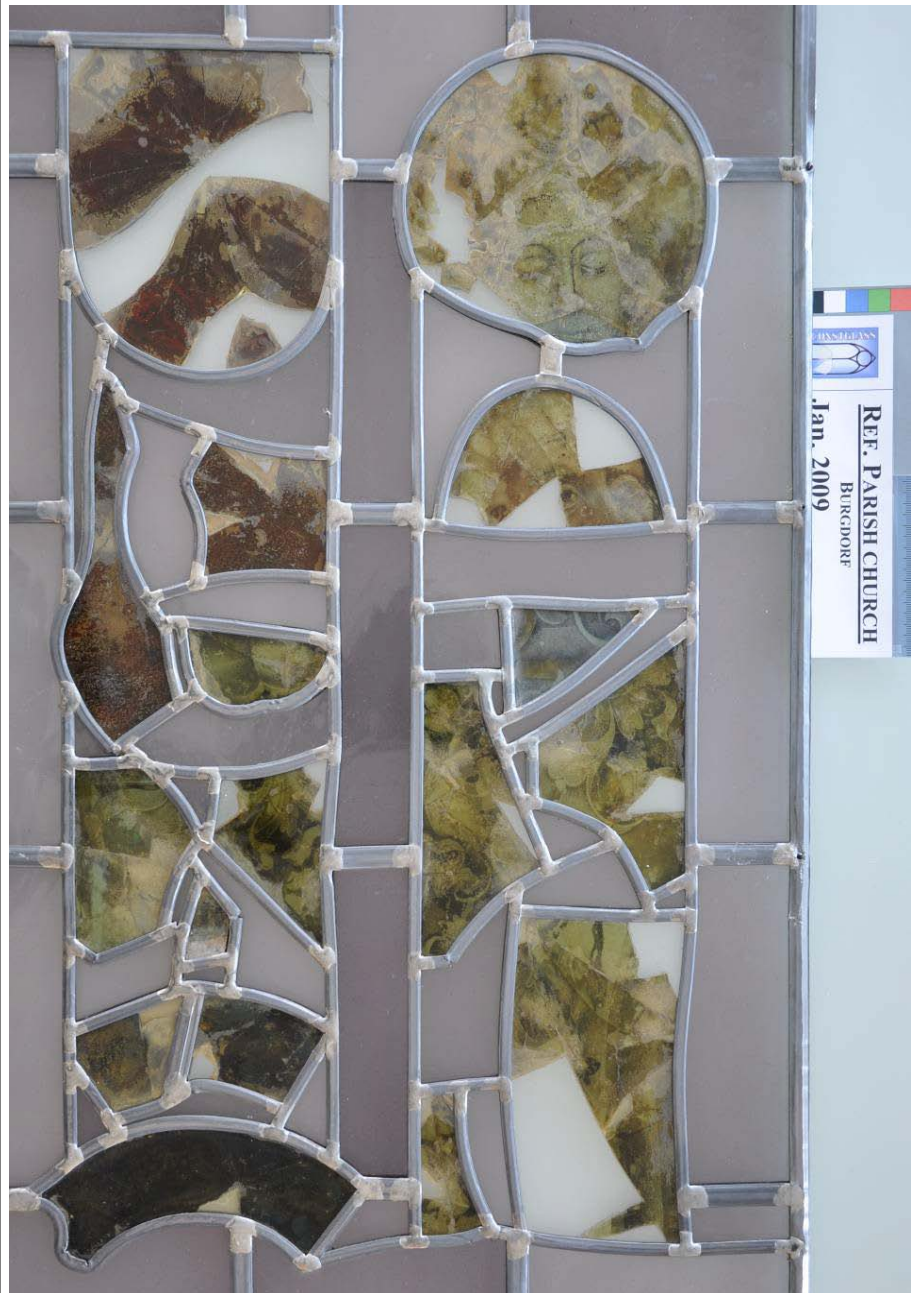
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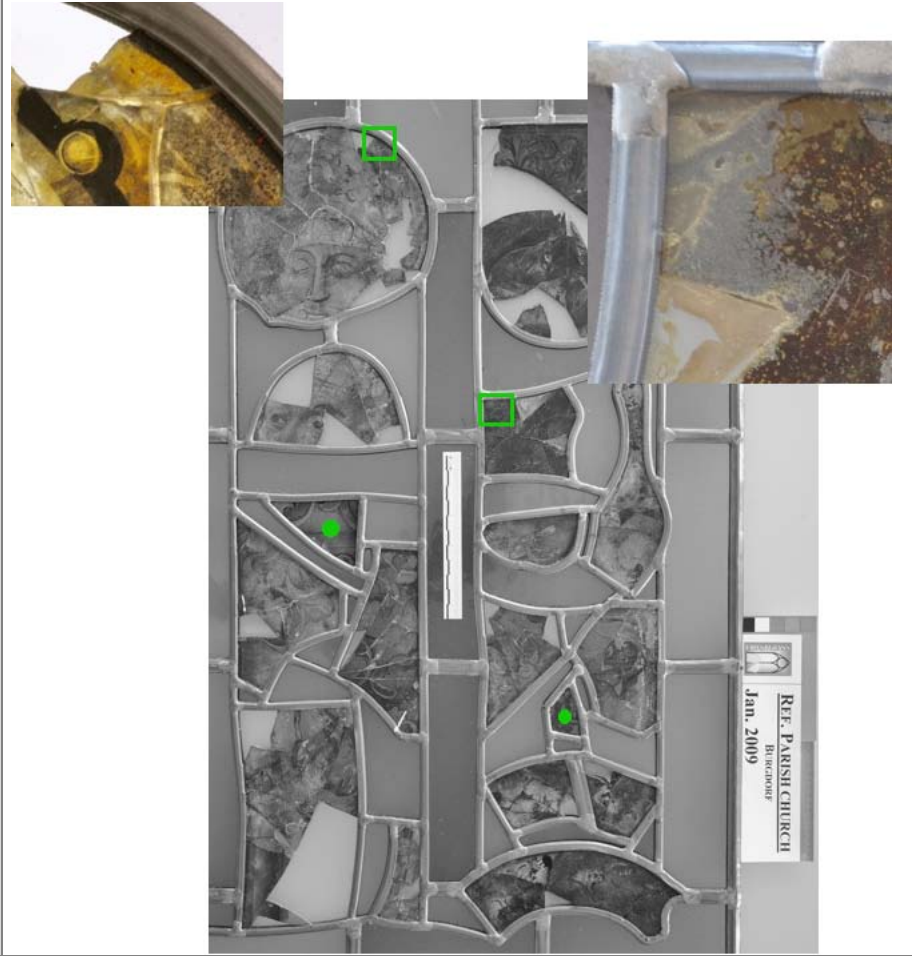
Pictures of panel in reflecting light, external surface.



Examination of the

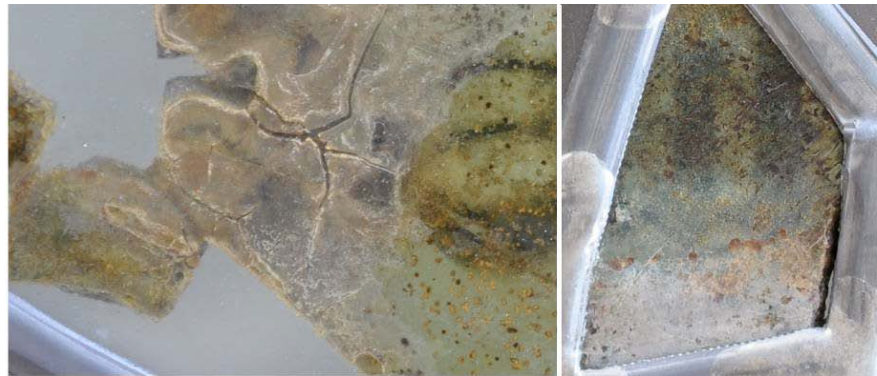
Detailed phenomenological optical analysis will be performed.



object (if possible with microscope)	<p>Short: The glass is in stable condition. On the (laminated as well as open) external surfaces some pitting corrosion.</p> <p>The paint is stable. Some paint loss.</p> <p>The lead is a perfect condition. The putty is in a good condition.</p> <p>The Araldite® is yellowing and in some places loses adhesion / flakes off, showing clearly different types of deterioration.</p>
Selected damages	<ul style="list-style-type: none">● fragment without doubling / pitting corrosion□ selected damages for samples / pitting corrosion in Araldite® 
Selection and documentation of samples to be	<p>Is there a difference between the pitting corrosion with Araldite® and without?</p>



analysed
**Questions to the
scientists**



What is the impact of the resin on the glass surface and painting?



**Selection and
documentation of
areas for reversibility
tests or reactivation
tests**





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RESPONSIBLE CONSERVATORS (name, phone, e-mail)

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