Project: VALE HEALTH AND WELNESS CENTRE
CITY OF PORT COLBORNE
2022 ROOF REPAIR

EXECUTIVE SUMMARY:

WTC/Tremco is proposing a roof restoration project at the Vale Health and Wellness Centre located at 550 Elizabeth Street, Port Colborne, Ontario. The project involves repairing/replacing the leaking internal roof valley gutter drains with an option to install a fluid applied coating over the entire existing facility roof to provide a monolithic waterproofing solution. A comprehensive plan has been developed based on the review of the construction drawings/details and on-site inspections/investigation. The project package is being submitted for your consideration and approval.

BACKGROUND:

The Vale Health and Wellness Building has been experiencing leakage since its initial construction. The City of Port Colborne had attempted numerous remediation avenues, including the original build and design team, consultants, and contractors. Several unsuccessful repairs were attempted. The City of Port Colborne was referred to Gerry Caplette from Tremco. Tremco (better known as Tremclad products) is a construction product manufacturer that has manufacturing construction products and providing building envelope solutions in Ontario since 1928. Tremco has extensive references from Public Bodies locally, such as the Niagara Health System, Brock University and Jungbunzlauer.

Weatherproofing Technologies Canada is a division of the Tremco group of companies and offers a turnkey solution for design-build, Building Envelope Solutions. The City of Port Colborne commissioned WTC to investigate the ongoing roof leaks at the City of Port Colborne - Vale Health and Wellness Centre. WTC was hired with line-item pricing through the Kinetic GPO.

The Kinetic GPO is a pretender Group Purchasing Organization that services over 400 Public Sector Customers in Ontario alone; it complies with the BPS, and everything is verified by the RS Means. Kinetic tendered for roofing and building envelope services in Ontario. 2 Manufacturers with General Contractors where awarded Tremco and their Service Division WTC and the Garland Company and their Service Division DBS. Tremco and Garland were each contacted by Port Colborne's procurement department. Due to the complexity of this project, Garland declined to bid. Tremco then worked with Kinetic Approved Architects, Engineers and Contractors to provide a proposal for an investigation of the problem.

WTC completed onsite meetings with facility staff and maintenance teams and was shown the areas of water infiltration. WTC received building construction drawings and details from the facility team and was able to speak/interview site staff to collect information on the dates/times and weather conditions that these leaks typically occurred. WTC/Tremco had Tremco/CANAM building analysis team attend the site to assess the interior air humidity, air temperature and air leakage to determine if an interior dew point was present and that the building air vapour barrier was performing as required. During these inspections, the interior air conditions were in good standing, and the existing building mechanical systems were operating sufficiently. Tremco/WTC engaged Ausenco Engineer Inc. and Larry May Architect Inc. to review the provided building drawings/details and to oversee an onsite investigation of the existing roof assembly. WTC engaged Flynn Canada to provide a roofing technician team to conduct a series of investigation processes under the direction of the Engineer and Architect. The completed investigation allowed the WTC Team, Ausenco Engineering and Larry May Architect to develop a scope of work and repair details to conclude the ongoing roof leaks with an appropriate material and labour warranty.

INVESTIGATION:

Some key notes resulting and developed from the onsite portion of the investigation are as follows below:

1. Standing seams were inspected and appeared to be insufficiently closed in localized areas.
2. 2 openings were cut in the roof 18” up from the eaves at the A1 gutter in line with standing seams that appeared to be compromised. No evidence of water in the roof assembly were evident concluding that these seams most likely are not leaking or are not leaking enough to make it to eaves/gutter. The existing liner does not terminate at the end of the existing gutter pan
3. An opening was created in the bottom of the A1 gutter to determine the construction details. There is Alphagard Bio coating on top of a white EPDM gutter liner that appears to be 45mil thick and is fully adhered to the 1” ISO beneath it. The ISO was saturated, and the gutter appeared to be constructed with 16GA galvanized steel.
4. Upon further investigation at the interior of the A1 gutter it was found that there was no sufficient termination of the existing AVB/Insulation Liner to the repair created at the bottom side of the gutter with spray foam insulation creating convection/dew point in cold weather conditions.
5. When the 2lb CUFCA Certified spray foam insulation was removed from the bottom side of the A1 gutter it appeared to be an inconsistent covering varying from 1”-2.5” thick at a value of R6 per inch.
6. When the 2lb spray foam insulation was removed from the bottom of the A1 gutter trough, voids were found between the bottom of the galvanized gutter trough steel and the insulation in various areas.

7. Flood testing of the existing A1 drains caused an immediate leak. Removal of the existing drains determined that they are not actually drains but are 8" Stack Jacks that were installed upside down and connected to the existing plumbing with a Fernco. There are no clamping rings, and the membrane was terminated to the SJ flange with EPDM Bonding adhesive and various mastics and sealants. The ISO insulation around the drains was fully saturated with water. The strainers are loose laid on top of these locations
8. A section of the A1 gutter was isolated including the drain, and water tested. The water was filled to the bottom of the standing seam roof and began to travel out the end of the gutter as it is the lowest elevation for water to escape. No leaks were observed after 2 hours of continuous flood testing.
9. It was observed that there was missing and removed pipe insulation on the interior plumbing drainpipes from location of A1 drain connection on the leader to main stack down pipe in the wall on
10. Investigation of the mechanical system determined that the roof drains travel through the building and into the retention pond on the Southwest side of the property
11. Review of all other areas of gutter trough drains determined that the existing EPDM gutter liners have lost adhesion and moved, creased, and tented in areas. There were also failing previously installed repair patches and cover strips.
12. Review of all drain assemblies within all areas of gutter troughs determined that the drain assemblies are insufficient for the proposed use and should be removed and replaced.

INVESTIGATION SUPPORTING IMAGES:

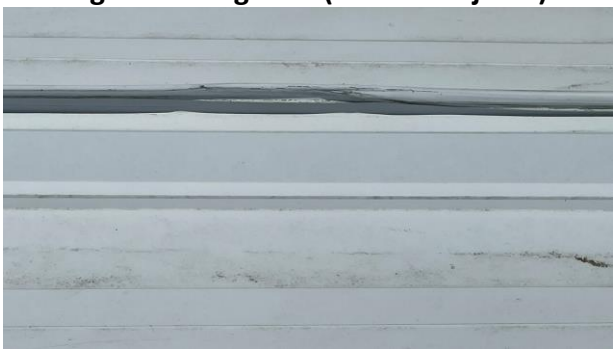
Air gap between gutter pan and insulation

Existing 2lb insulation 1.5" thick (R9) (Interior)

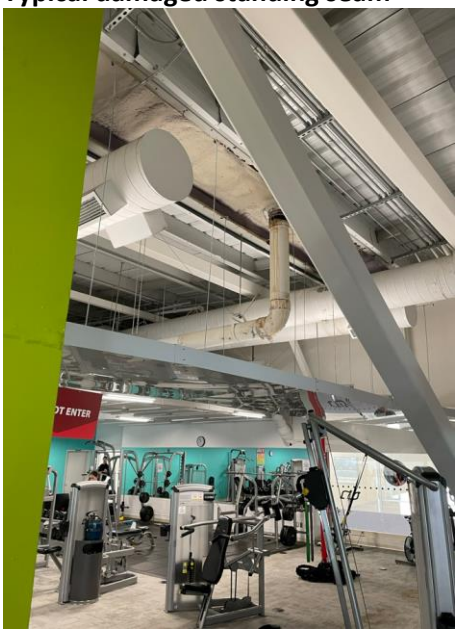
Insulation required on back side of C channel (Interior

Existing drains in gutter (6-8” stack jacks)

Existing Gutter Temporary Repair

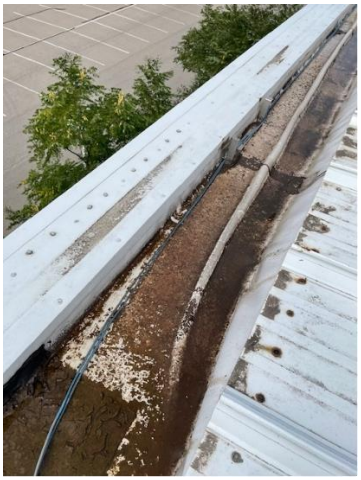


Typical damaged standing seam



Interior Leaking

Gutter 1A



Creased South Gutter Liner

Failing Gutter Liner Patches

REPAIR OPTIONS:

Once the investigations were completed, and all teams met to discuss the most economical and long-term repair solutions, the WTC Team, Ausenco Engineering and Larry May Architect developed the repair details and scopes of work as listed below to conclude these ongoing roof leaks. The labour portion of these quotes where bid using 3 OIRCA Kinetic approved Roofing Contractors, Flynn Canada, Schreiber Brothers Ltd and Atlantic Roofers. Flynn was the successful bidder for labour.

ROOF RESTORATION OPTION # 1 (RECOMMENDED)

Gutter Location "A1"

1. Mobilization of Site (Project setup including all safety requirements)

2. Remove existing heat tracing/ de-icing cables and clips from roof eaves and internal gutter (work area) and store for re-installation when repairs are complete.

3. At the Location of Gutter "A1" Cut, release/remove the existing EPDM liner from the bottom of the gutter, remove ISO insulation beneath it and dispose. Release existing EPDM liner from the sides of the gutter, to remain in place for lap splicing over new EPDM liner. Cut and remove the bottom portion of the existing galvanized steel gutter pan as per detail SK-1. Instal new prefabricated steel gutter pan to extend to the bottom of the existing back-to-back "C" channels and secure. Install new 1.5" ISO insulation with LR foam to the bottom and sides of the gutter. Adhere new EPDM Gutter Lining to ISO insulation. Splice existing .045EPDM liner overlapping new EPDM Gutter Lining and apply lap sealant to exposed edge. Remove and Replace 6 drain assemblies and connect with

Furnco at the interior side of the building. Install drain clamping rings and strainers as per manufacturers installation details.

4. Repair localized areas of standing seams on entire roof area that are not fully closed with hand crimpers and coat over with Tremco Seam Sealer and SolarGard HY-Build including accessories where required. Repair any failed sealants at transitions, penetrations, and water shedding details

5. At the interior side of Gutter Trough "A1" Apply CUFCA Certified 2lb spray foam insulation within the "C" channel against the gutter and ensure it ties into the existing insulation liner as per detail SK-1. Insulate all mechanical drain plumbing to ensure no condensation/dew point are present. Prepare/Clean and paint area of spiral HVAC ducting with water staining located under "Gutter A1". Install new Skirting/ Closure trims on sides and bottom of Gutter "A1"

6. Re install existing heat tracing/ de-icing cables and clips to roof eaves and internal gutter

7. Demobilise site.

This repair option includes a 2 Year Contractor ORCA material and labor warranty. This scope of work can be completed for the cost of $684,014.59 +HST

ROOF RESTORATION OPTION # 2 (RECOMMENDED)

As and add on to Option #1, all other locations of gutters to be re lined and new drains installed with the addition of a fluid applied coating over entire facility roof.

1. At the Location of all other Gutter locations cut, release/remove the existing EPDM liner from the bottom of the gutter and remove ISO insulation beneath it and dispose. Release existing EPDM liner from the sides of the gutter, to remain in place for lap splicing over new EPDM liner. Install new 1.5" ISO insulation with LR foam on the bottom and sides of the gutter. Adhere new EPDM Gutter Lining to ISO insulation. Splice existing .045EPDM liner overlapping new EPDM Gutter Lining and apply lap sealant to exposed edge. Remove and replace 25 drain assemblies and connect with a U-Flow internal pipe seals. Install all clamping rings and strainers as per manufacturers installation details. Replace all damaged water shedding flashings/trims where required.

2. Coat the entire existing facility standing seam steel roof and water shedding details with fluid applied SOLARGARD HY-BUILD and applicable accessories.

This repair option includes a 12 Year Tremco QA Warranty applied to entire facility roof including all areas of gutter throughs. This scope of work can be completed for the cost of $1,991,764.18+HST

ROOF RESTORATION OPTION # 3 (NOT RECOMMENDED)

The idea of a full overlayed -new roofing assembly was discussed in depth with the project team and determined not to be economical. A budgetary price of $5,175,000.00+HST was assembled to complete a new TremplyKEE overlay roofing system.

TREMCO™
Roofing and Building Maintenance

WEATHERPROOFING TECHNOLOGIES CANADA

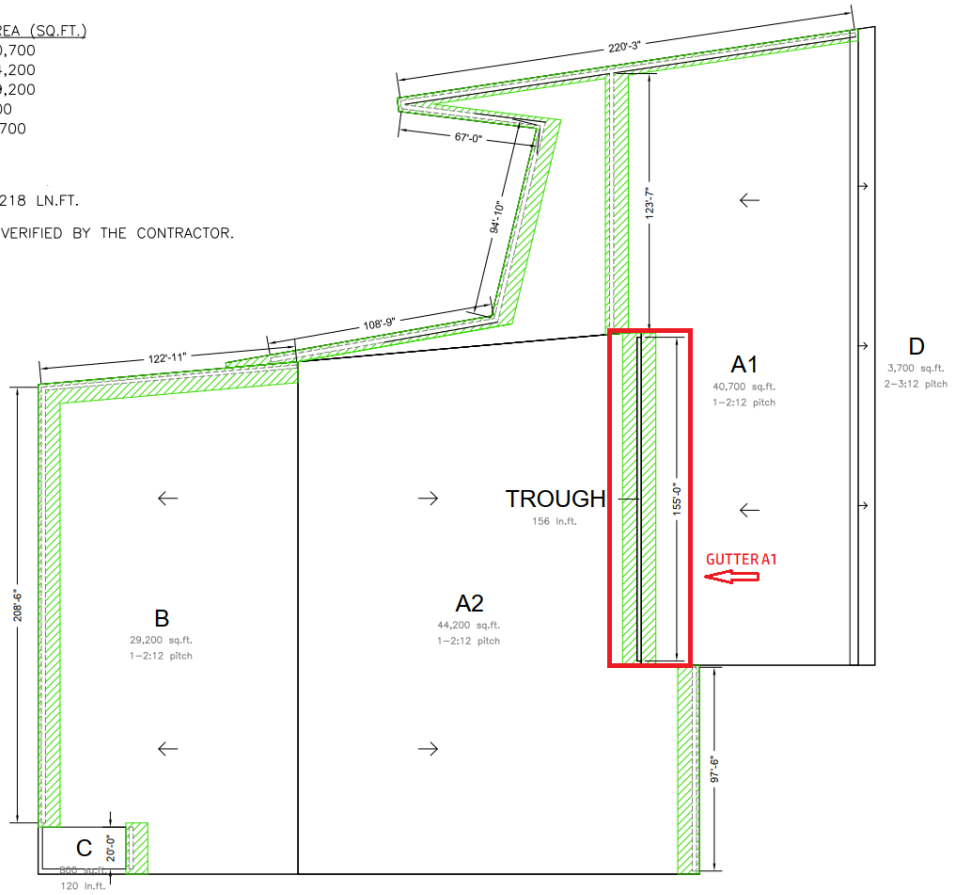
ROOF PLAN

LEGEND

ROOF	TYPE	AREA (SQ.FT.)
A1	METAL	40,700
A2	METAL	44,200
B	METAL	29,200
C	MB	800
D	METAL	3,700

GUTTER 1,218 LN.FT.

ALL DIMENSIONS TO BE VERIFIED BY THE CONTRACTOR.



Roof Plan
Scale: 1:600

ROOF TOP EQUIPMENT AND PROJECTIONS

ANTENNA	HVAC ON SLEEPER
BREATHER	LADDER
CAPPED STACK	LIGHT POST
CHANGE IN ELEV	PITCH POCKET
CHIMNEY	PLUMBING OR SOIL STACK
CONDUIT LINE	
CONTROL JOINT	ROOF ANCHOR
DRAIN	SATELITE DISH
EXHAUST FAN ON CURB	SCUPPER
EXPANSION JOINT	
FLAG POLE	SKYLIGHT
GAS PIPELINE	SLOPE
GOOSENECK VENT	SQUARE VENT
GOOSENECK VENT ON CURB	SQUARE VENT ON CURB
HATCH	TALLCONE OR "B" VENT ON CURB
HVAC UNIT	WALKWAY PADS
HVAC UNIT ON CURB	

rev	DESCRIPTION	by	date
rev	DESCRIPTION	by	date
rev	DESCRIPTION	by	date
REVs	DESCRIPTION:	BY:	DATE:

STATUS:

TREMCO
Roofing & Building Maintenance

CLIENT: City of Port Colborne
66 Charlotte Street
Port Colborne Ontario, L3K 3C8

ARCHITECT: –
–
–

SITE: Vale Health and Wellness Centre
550 Elizabeth St, Pt. Col. ON L3K 5W3

TITLE: –
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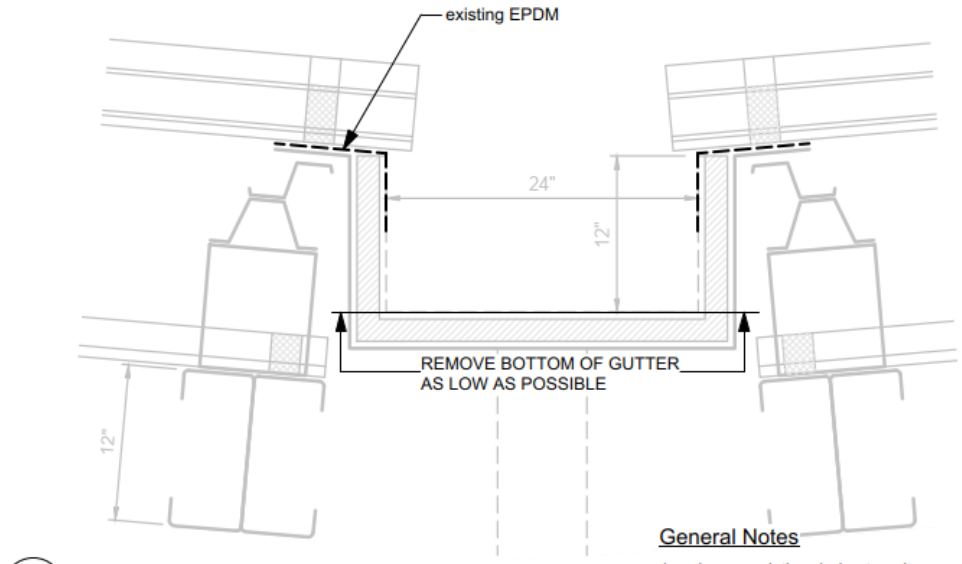
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
As Noted	Oct 8, 2020	Steve Fl	–

PROJECT NO:	DRAWING NO:	REVISION:
2020-01	1	0

TREMCO™
Roofing and Building Maintenance

WEATHERPROOFING TECHNOLOGIES CANADA

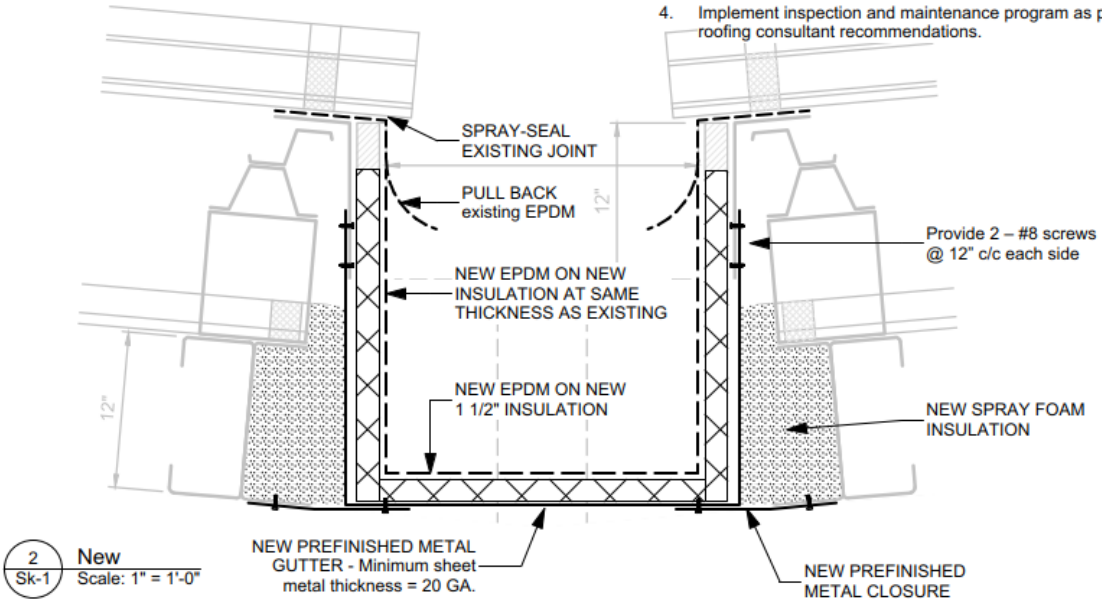
GUTTER "A1" PROPOSED REPAIR DETAIL



1 / Sk-1 Existing / Removals
Scale: 1" = 1'-0"

General Notes

1. Lower existing drains to suit.
2. Remove and re-install heating cables to suit.
3. Provide additional drains as per mechanical drawings.
4. Implement inspection and maintenance program as per roofing consultant recommendations.



2 / Sk-1 New
Scale: 1" = 1'-0"

Prime Consultant:
Ausenco
Ausenco Engineering Canada Inc.
1016B SUTTON DRIVE, SUITE 100
BURLINGTON, ON L7L 6B8
TEL 905 319 1698
FAX 905 319 1801

Project:
Vale Wellness Centre
Port Colbourne ON

Drawing:
Gutter Section
Scale: 1" = 1'-0"

Larry May Architect
623308 Negro Creek Road
Chatsworth ON N0H 1G0
Landline: 519-794-4406
Mobile: 416-525-3556
Larry@LarryMayArchitect.com

Drawn By: Larry May, Architect
PdfPublish: YYY-MM-DD_time: 2022-10-07_1641
CAD File Name: ValeWellness_Sk-1_2022-09-22.vwx
Scale: as noted when plotted at 8 1/2 x 11"
Drawing No.: Sk-1

COOPERATIVE PURCHASING PROCUREMENT

The fall/spring roofing work as outlined above is being proposed through the Kinetic GPO cooperative purchasing contract. These contracts simplify and expedite facility improvement projects while ensuring budget predictability. This approach adheres to the legal requirements specific to public works projects while offering greater control with a streamlined yet thorough procurement process. WTC's contract delivers the following benefits:

1. A single source for all facets of discovery, programming, scope of work development, construction, and commissioning.
2. Local, best-in-class and pre-qualified subcontractors experienced in all roofing and weatherization disciplines that are evaluated on compliance, capability, and experience.
3. Guaranteed maximum pricing to eliminate delays and costly change orders.
4. Performance-based quality construction services.
5. Shorter project execution time.
6. Single source responsibility.

Please do not hesitate to contact us should you have any questions.

Sincerely,

Justin Dufresne

Justin Dufresne
Construction Manager
Weatherproofing Technologies Canada

CC: Gerry Caplette, Tremco – Senior Roofing Representative
Justin Dufresne, WTC – Construction Manager
Timothy Dalsin, WTC – Director
Gerald Ford, Tremco – Kinetic GP