

NOVA SCOTIA AQUACULTURE REVIEW BOARD

IN THE MATTER OF: *Fisheries and Coastal Resources Act, SNS 1996, c 25*

- and -

IN THE MATTER OF: An Application by KELLY COVE SALMON LTD. for a boundary amendment and two new finfish aquaculture licenses and leases for the cultivation of Atlantic salmon (*Salmo salar*) - AQ#1205x, AQ#1432, AQ#1433, in Liverpool Bay, Queens County (the "**Application**")

Affidavit of Christopher Glebe affirmed on January 19, 2024

I affirm and give evidence as follows:

1. I am Christopher Glebe of St. Stephen, New Brunswick. I am an architectural designer and the principal of Suasive Visual Design Ltd.
2. I have personal knowledge of the evidence affirmed in this affidavit except where otherwise stated to be based on information and belief.
3. I state, in this affidavit, the source of any information that is not based on my own personal knowledge, and I state my belief of the source.
4. I have been retained by Kelly Cove Salmon Limited ("**KCS**") to provide my independent expert opinion to the Nova Scotia Aquaculture Review Board in connection with KCS's Application to expand its Atlantic Salmon operations at Coffin Island (AQ#1205X) and for two new Atlantic Salmon aquaculture farms at Mersey Point (AQ#1433) and Brooklyn Point (AQ#1432).
5. In particular, I have been asked for my independent expert opinion with respect to the visual impact of KCS's proposed expansion of its Atlantic Salmon aquaculture operations in Liverpool Bay on key selected views in the area of Liverpool Bay.
6. My independent opinion on the visual impact of the proposed expansion on key select views in the area of Liverpool Bay is set out in my report attached as **Exhibit A**.
7. My CV is attached as **Exhibit B**.

AFFIRMED before me in Saint John, New Brunswick, on January 19, 2024.



New Brunswick Commissioner of Oaths



Christopher Glebe

TAB A

**KCS' Application re AQ#1205X, AQ#1432,
AQ#1433 in Liverpool Bay, Queens County**

This is Exhibit A referred to in the Affidavit
of Christopher Glebe, affirmed before me
on January 19, 2024.



New Brunswick Commissioner of Oaths



LIVERPOOL CAGE SITES VISUAL IMPACT STUDY

REQUESTED BY
KELLY COVE SALMON LTD.

PREPARED BY
SUASIVE VISUAL DESIGN LTD.

Study Summary

The purpose of this study is to assess the visual impact of the proposed cage sites adjacent to Liverpool, Nova Scotia, Canada - Coffin Island, Mersey Point and Brooklyn, by 3D modelling and rendering them to create composite images approximating their proposed real-world appearance so as to assess their visual impact in key selected views.

The study seems to indicate these elements have minimal impact on the views of the selected locations.

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3D MODELLING OF PROPOSED SITES

Purpose and Scope

The purpose of this study to assess the visual impact of the proposed cage sites adjacent to Liverpool, Nova Scotia, Canada - Coffin Island, Mersey Point and Brooklyn, by 3D modelling and rendering them to create composite images approximating their proposed real-world appearance so as to assess their visual impact in key selected views.

Methodology of 3D Modelling

The data and imagery was collected, generated and produced as follows:

1. **Photography** - Key locations were selected and photographed to serve as the basis of the views (see View Location Mapping) The images were cropped, colour corrected, and in one instance photo-merged but were otherwise unedited. The meta-data, including focal length and geolocation was extracted for accurately producing the composite imagery.

2. **GIS Mapping** - Using OpenGIS the locations of the sites, the views, satellite photography, and massing of the shoreline was geolocated to provided geolocation data for the 3D model.

3. **3D Modelling** - Key above water elements were modelled to scale (See Figure 1) in Rhino 3D based on the CAD drawings of each element (Feed Barge, Cages, and Buoys) at a level of de-

tail sufficient to approximate their proposed real-world appearance from the shoreline. Some simplification was used for details that would not be typically visible from more than 100m away, but were sufficiently detailed to capture a reasonable approximation of their real-world appearance for the views selected.

The resultant 3D models were used to model each cage site as described in their respective proposals (see Figure 2 and 3D Model : Aerial View).

Views were created that approximated the relative position (based on GIS mapping geolocation), focal length (based on photograph meta data), geography reference massing (from GIS mapping) and extents of the collected photographs so as to create renderings that would align to the photographs approximating the sites location, scale (size), and orientation.

4. **Rendering** - Each view was photorealistically rendered in Rhino 3D with materials (colour), alpha transparency (cut-out of model), and reference massing so as to facilitate a reasonably accurate composite image for each view.

Methodology of Compositing Images

Each rendering was composited (overlayed on) with the collected photographs to create a reasonable approximation of the real-world appearance of the proposed sites from the view's van-

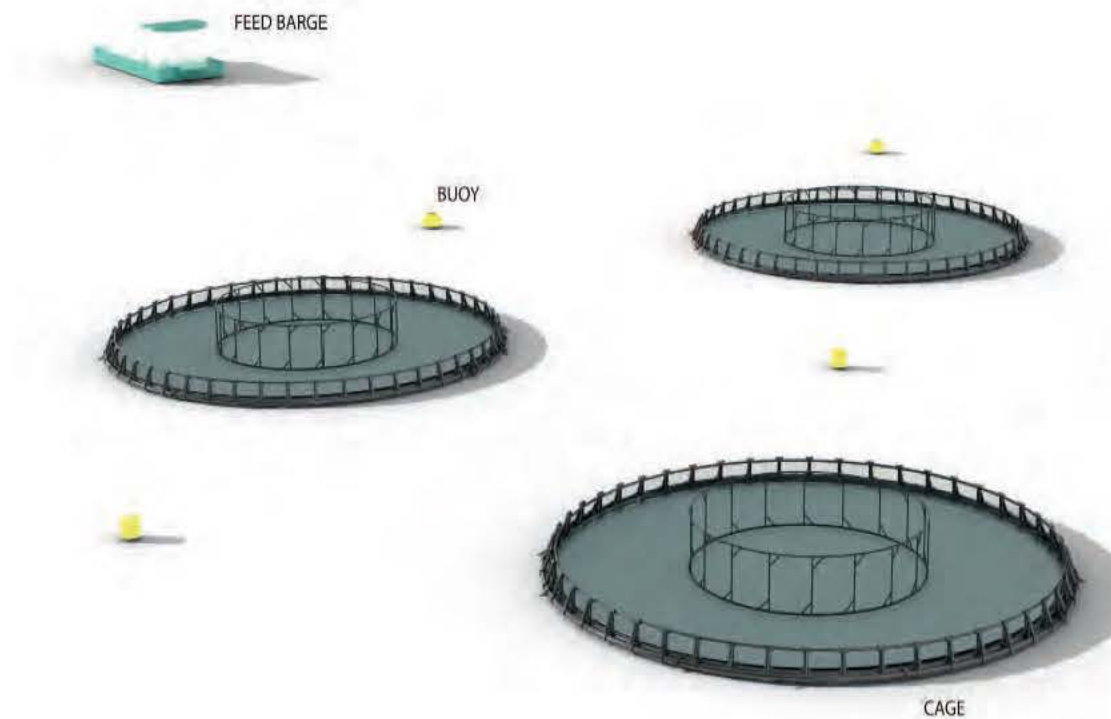


Figure 1 : Elements modelled.



Figure 2 : Typical Cage Site 3D Model.

tage point. Each rendering was positioned and checked using the reference shoreline massing to achieve a reasonably accurate representation (some minor variation is typical due to variation in geolocation data and photographic lens distortion, the extent of which can be seen in view 3 where an existing cage site is evident) of their visual impact on the views.

Three images were produced for each view:

1. **3D Model Location** of model rendering highlighted in red. Often the location of the rendered site model was difficult to see (as it often had a low visual impact), and this was intended to show where the model rendering was applied to the composite image.

2. **Source Image** - Unedited photograph from view location. Intended to show the existing conditions of each view.

3. **Composite Image** - A reasonable approximation of visual appearance of the proposed cage sites composited with the source image. Intended to allow the assessment of its visual impact.

Observations and Conclusions

The low profile of the cage elements with the exception of the "bird stand" central structure and the Feed Barge, and the translucent nature of the netting when viewed from afar appears to allow the cages to largely blend into their surroundings (hence the requirement to add a 3D model location image to indicate where the images were modified) when accessed empirically based on the amount of modification to the imagery. Intangible aspects, such as perceived visual nature of the elements is subjective, but can be individually assessed by reviewing each image. The study seems to indicate these elements have minimal impact on the views of the selected locations.

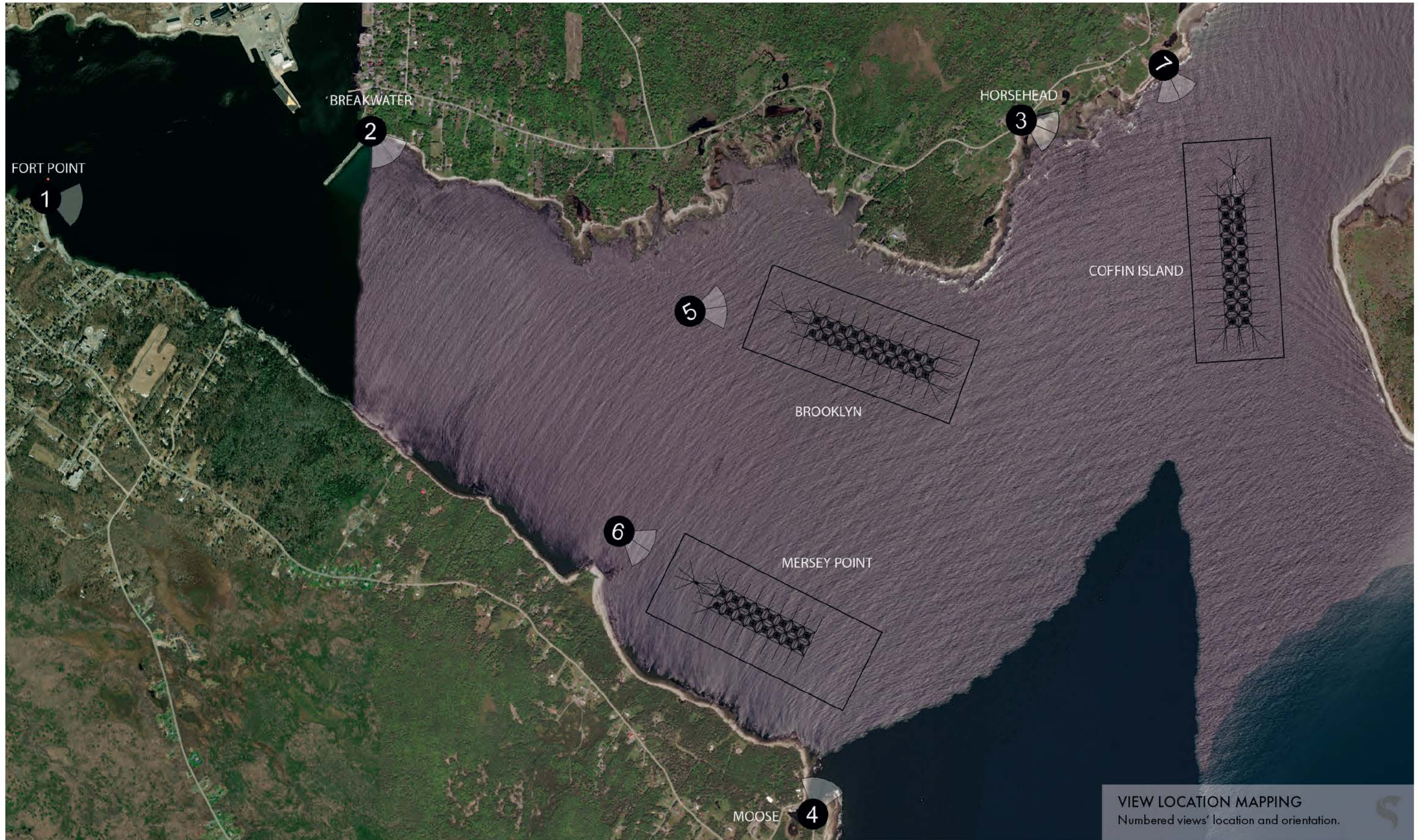
APPENDIX A MODEL IMAGES

SOURCE
MODELLED BY SUASIVE VISUAL DESIGN
LTD. IN RHINO 3D



3D MODEL
Aerial view of entire 3D model.





VIEW LOCATION MAPPING
 Numbered views' location and orientation.

APPENDIX B

VIEW COMPOSITE IMAGERY

SOURCE
RENDERED BY SUASIVE VISUAL DESIGN
LTD. IN RHINO 3D AND COMPOSITED
WITH ADOBE PHOTOSHOP



View 1: Fort Point - Source Image
Unedited photograph from view location.





View 1: Fort Point - 3D Model Location
Location of model rendering highlighted in red.





View 1: Fort Point - Composite Image
Approximation of visual appearance of proposal.





View 2: Breakwater - Source Image
Unedited photograph from view location.



MERSEY POINT

View 2: Breakwater - 3D Model Location
Location of model rendering highlighted in red.



View 2: Breakwater - Composite Image
Approximation of visual appearance of proposal.



View 3: Horsehead - Source Image
Unedited photograph from view location.



COFFIN ISLAND

View 3: Horsehead - 3D Model Location
Location of model rendering highlighted in red.



View 3: Horsehead - Composite Image
Approximation of visual appearance of proposal.



View 4: Moose - Source Image
Unedited photograph from view location.





View 4: Moose - 3D Model Location
Location of model rendering highlighted in red.





View 4: Moose - Source Image
Unedited photograph from view location.





View 5: Brooklyn - Source Image
Unedited photograph from view location.





View 5: Brooklyn - 3D Model Location
Location of model rendering highlighted in red.



View 5: Brooklyn - Composite Image
Approximation of visual appearance of proposal.





View 6: Mersey Point - Source Image
Approximation of visual appearance of proposal.





MERSEY POINT

View 6: Mersey Point - 3D Model Location
Location of model rendering highlighted in red.



View 6: Mersey Point - Composite Image
Approximation of visual appearance of proposal.



View 7: Coffin Island - Source Image
Unedited photograph from view location.






COFFIN ISLAND

View 7: Coffin Island - 3D Model Location
Location of model rendering highlighted in red.





View 7: Coffin Island - Composite Image
Approximation of visual appearance of proposal. 

LIVERPOOL CAGE SITES

V I S U A L I M P A C T S T U D Y

TAB B

**KCS' Application re AQ#1205X, AQ#1432,
AQ#1433 in Liverpool Bay, Queens County**

This is Exhibit B referred to in the Affidavit
of Christopher Glebe, affirmed before me
on January 19, 2024.



New Brunswick Commissioner of Oaths



Christopher Glebe
Designer

- ██████████
- ██████████
- ██████████
- ██████████, NB.

ABOUT ME

Excellence in Design. Extensive experience in both architectural and graphic design. Over 20 years in the field of architecture and media. Worked on projects of varying scope across the spectrum of the industry utilizing an array of media including 3D visualization.

Meets Deadlines with High Standards. Proven track record of managing projects through complete development cycle, to completion on time and on budget.

Effective Team Player – “Chris was a team leader responsible for the preparation, coordination and execution of complex project portfolios and presentations. His design and rendering skills are outstanding. Coupled with his extensive technical knowledge of computer software programs and equipment, his strong management and communication skills, during his time at Petroff Partnership Architects, Chris quickly rose to become a leader within our design team.” – Guela Solow, Partner.

HOBBIES



drawing



photography



design



movies



cooking



cycle

WORK EXPERIENCE (The Last 25 Years)

Principal
2022-Present

Suasive Visual, St. Stephen, NB, Canada
Providing architectural design and visualization to companies across Canada with a focus on advanced application of technology.

Contract Designer
2001-2022

Contractor for various Design Firms and Organizations
Developed designs and drawings, visualization and BIM models on a variety of projects to expand organization's capabilities

Designer
2012-2014

Diamond Schmitt Architects, Toronto, ON, Canada
Developed designs and drawings, visualization and BIM models on a variety of projects with a primary focus on large institutional.

Designer
2011-2012

Delcan, Markham, ON, Canada
Developed designs and advanced drafting documentation. With a primary focus on visualization and large transit projects.

Senior Designer
2007-2008

Zeidler Partnership Architects, Toronto, ON, Canada
Developed designs and drawings based on direction from lead firm architects. With a primary focus on commercial buildings.

Senior Designer
2001-2007

ARK Inc. (Petroff Partnership Architects), Toronto, ON, Canada
Worked as designer on projects including retail, commercial, residential, institutional, educational, and media valued for many of the largest corporate clients and developers in Canada.

Junior Designer
1998-2000

NORR Architects + Engineers, Toronto, ON, Canada
Selected as co-op employee for the firm from the University of Waterloo for excellence in emerging design for this work/learn position. Received highest possible co-op rating by employer (A+).

EDUCATION

School of Architecture
1996-1999

University of Waterloo, Waterloo, ON, Canada
SSEF Scholarship and Design Studio Excellence Awards.

Engineering
2016 - 2017

University of New Brunswick, Fredericton, NB, Canada
Attended Bachelor of Engineering Chemical Engineering Program. Navy League of Canada and Connors Scholarships.

High School
1988-1994

Sir James Dunn Academy, St. Andrews, NB, Canada
High School Diploma with Honours.

REFERENCES

Available on request.

SELECTED AWARDS

SSEF Scholarship Design competition scholarship award.

Vaughan Urban Design Awards ARK Inc. Award for JCC Campus.

SKILLS

- Autodesk AutoCAD ██████████
- Autodesk Revit ██████████
- Adobe CS ██████████
- Rhinoceros 3D ██████████
- Microsoft Office Design ██████████



Christopher Glebe

Designer

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted] NB.

Selected Projects

TOP: Nest Studio, LEFT FROM TOP TO BOTTOM: Islington Chrysler, Toronto Island Concept Floating Mini House, Swartz Reisman Centre Exterior, Construction Whale, CHAT Highschool, Nest Studio Detail, Cichy Residence, UJA Cultural Centre, Untitled Competition Project, Chrysler Concept Interior, Bellebe Interios, Ottawa Stadium, BELOW Lebovic Library, Day Residence.



Mini- Portfolio



- [Redacted]
- [Redacted]
- [Redacted]