Basic Technical Document

Ahmed Alainachi, Sophie Kim, Andrea Roman, Angela Wahba, Amy Woods

October 19, 2023

Abstract

This document contains concept generations of 5 different subsystems of the Pikwakanagan Guardian Program building. It will conclude with the presentation of 3 of our best chosen subsystems to focus on and the reasons why.

# Table of Contents

1   Introduction

The Algonquins of Pikwàkanagàn First Nation, located in Renfrew County, ON, is looking to build an infrastructure for their Guardian Program. The goal of this program is to contribute Algonquin knowledge of the environment alongside Western knowledge via projects including area- or tourist- monitoring and species research.

The building for the Guardian program must accommodate such needs, as well as provide a design that reflects their sustainable way of life as stewards of the land.

2   Subsystems Throughout the Floor Plan

The building design consists of many different subsystems (rooms) to make it a fully cohesive workplace. Each subsystem room is designed with a different goal in mind to provide a specific function for that area, such as a communal area, kitchen/lounge area, office area, etc.

2.1   Boardroom/Communal Area
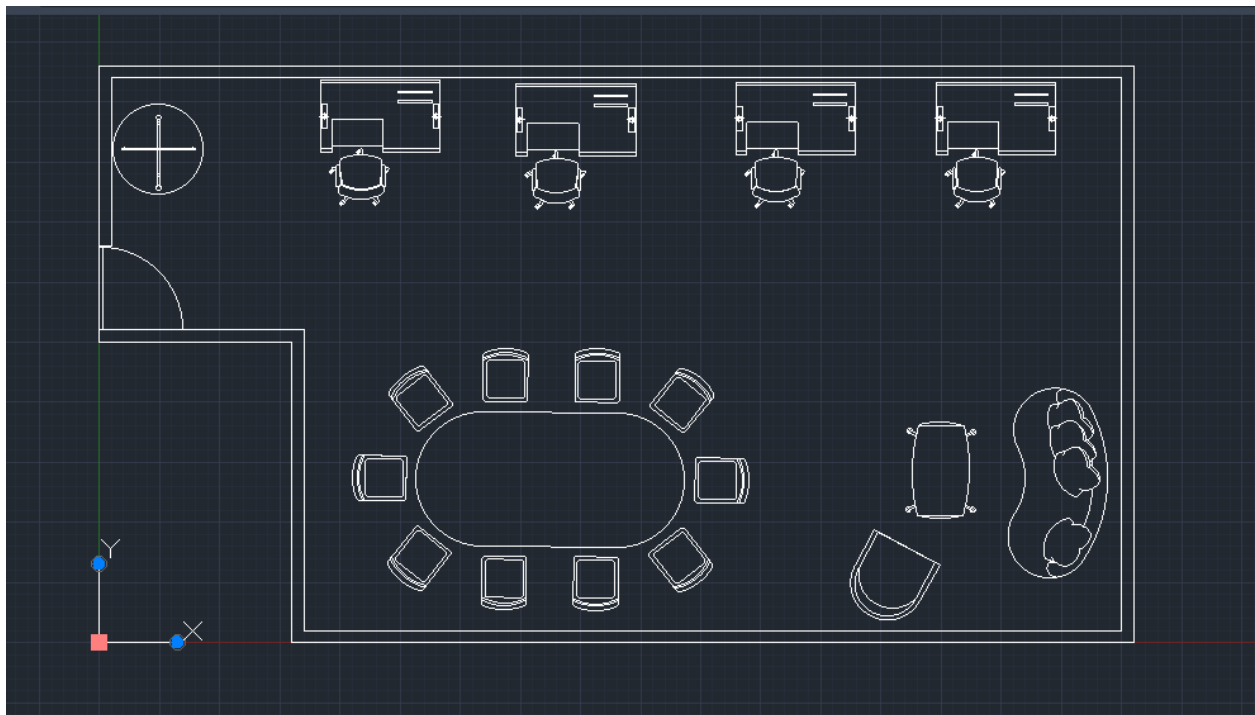
The communal area/board room will be designated for people to gather for group meetings and work in a social setting. It consists of a large round table for group discussions, some desks to work at, and a couch and seated area for more casual group settings. There will be full round

tables (as seen next to the entrance) and/or half-circle tables underneath windows to display pictures of the land, past projects, plants, and other on-theme decor.

The room's dimensions will be about 46'x24', and the shorter end (bottom wall) is 38'. The doorways will be 3 to 4'.

Pros:

- Great for any form of group meetings, formal or informal
- a room for either work or breaks to talk with peers

Cons:

- People working at desks may want a quieter workspace if group meetings are happening (although there is another designated quiet work room on the first floor)
- single desks may be too secluded for a group setting - perhaps change some to double desks to help more group work

2.2 Offices
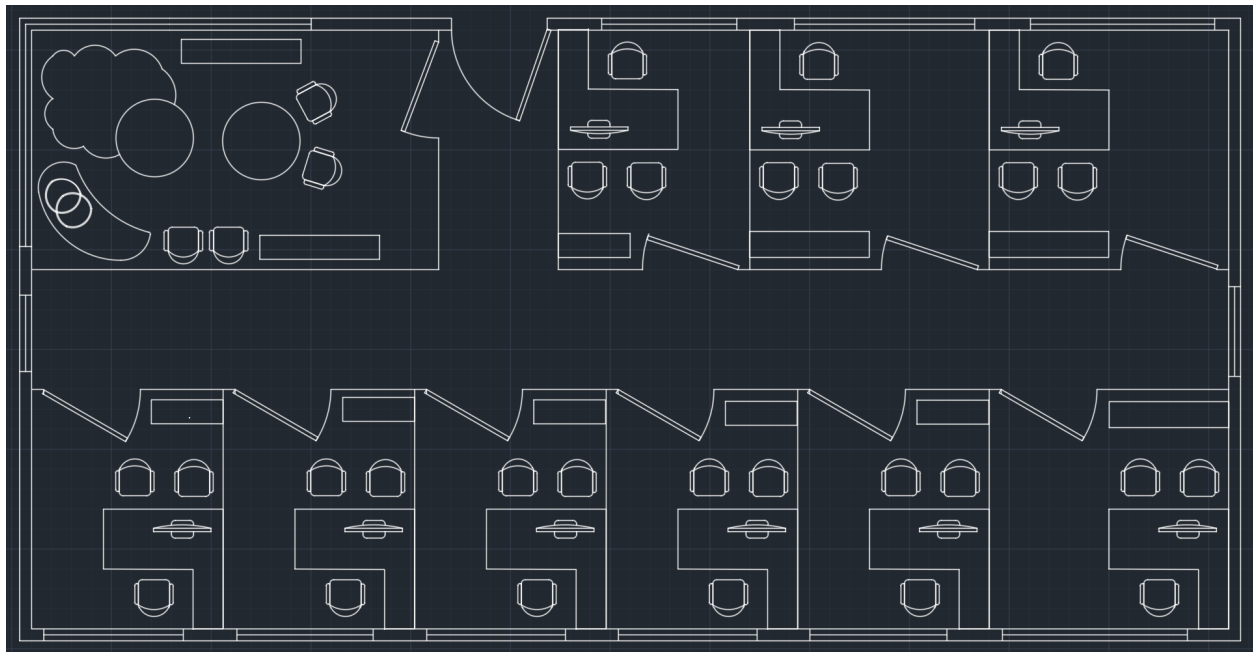
The 1st-floor office space (50'x25') will contain nine individual offices, six smaller offices (8'x10'), and three larger offices (10'x10') to accommodate accessibility. Each office will have a large window to allow ample sunlight, an office desk, a computer, multiple chairs, and a bookshelf.

The space will also have a break room (17'x10') that can be used by employees throughout the day or by occasional visitors as a waiting area. The break room will contain a few bookshelves, chairs, a couch, coffee tables, and a small carpeted area (for children). It will also have glass walls.

The hallways for this space will be five ft-wide, and all doorways four ft-wide to allow wheelchair access if needed.
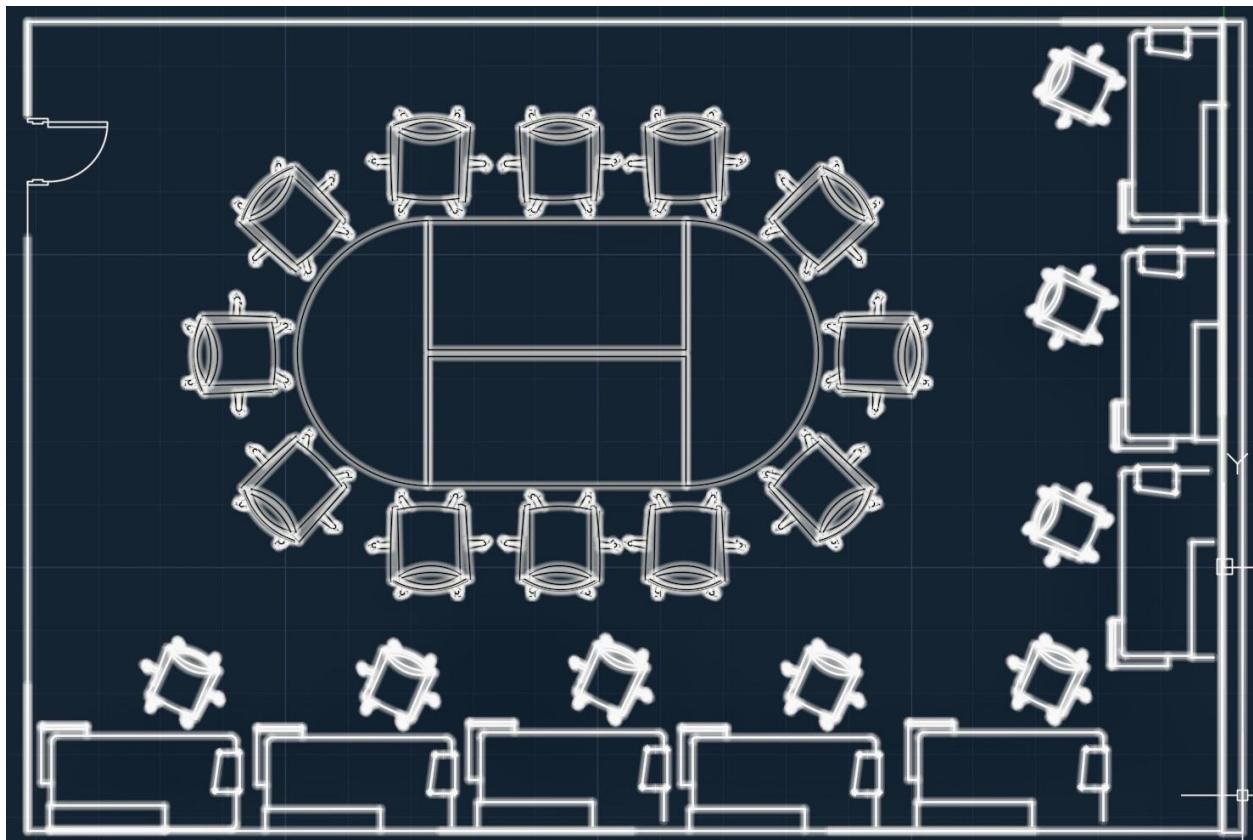
Pros:

- Accessible
- Holds many private offices and still allows easy interaction between employees
- Maximized window sizes incorporate natural light/design aspect

Cons:

- Possible noise disruptions from break room → room can be designated as a "quiet zone"
- Compared to an open office space (no division by walls), can be more costly

2.3   Computer Lab

The computer lab will be a large room, about 46'x40', with computer stations bordering it. Each computer station will have a couple of outlets beside it, as well as two monitors, a keyboard, and a mouse. In the middle, there will be a large table that can be used for meetings and a surface for any other task that requires a large surface. The table will be foldable and will have wheels for easy mobility. This will allow for a multifunctional space. One of the walls will have a large window, giving sunlight to all those working inside the computer lab.
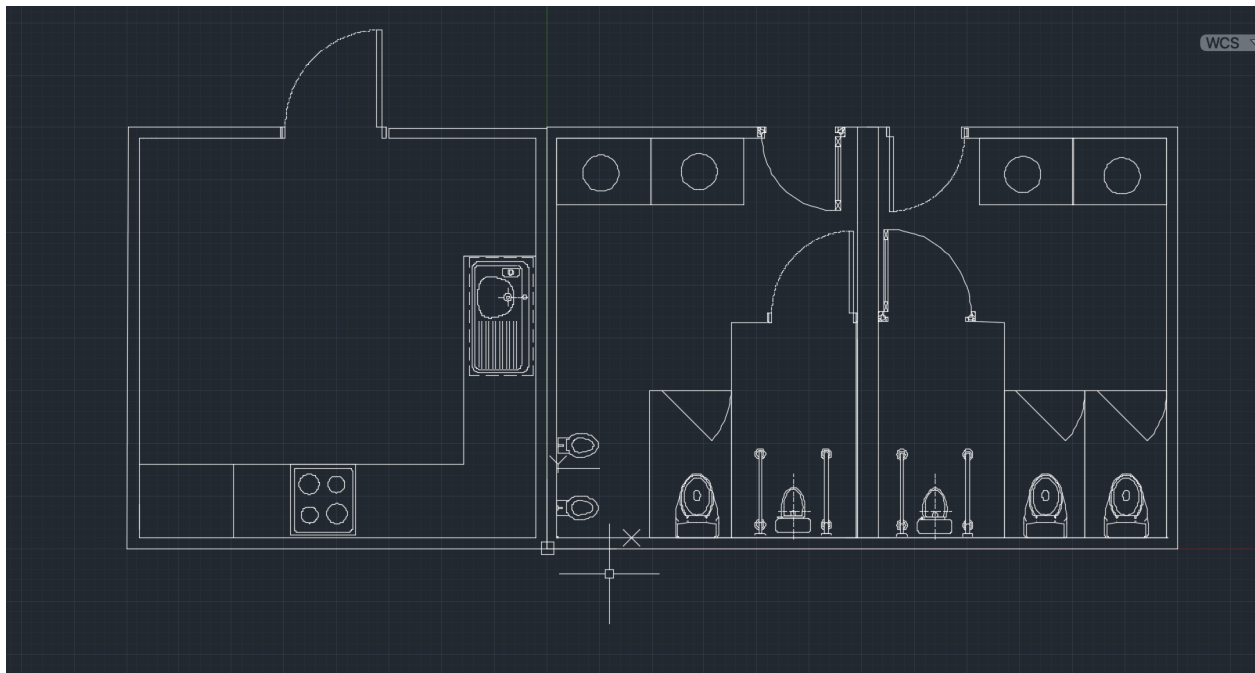
Pros:

- Multiple computer setups
- Big table at the center for any work that requires a large area, and can also be used for large meetings
- Table is movable/foldable, if the whole room is needed

Cons:

- Computer setups aren't movable
- There are chairs around the table, which might be hard/annoying to stack and move when more space is needed

2.4   Bathroom & Kitchen

The bathroom and kitchen are the smaller rooms in this floorplan, yet they are essential. This design portrays a small kitchenette with a fridge, stove, counter space, and an oversized sink. A small table will also be included in the kitchenette, allowing the room to serve as a break room

and a kitchenette. The bathroom design is simple yet adapts to the use of wheelchairs. The male bathroom includes one accessible restroom, one other standard restroom, and two urinals on the side. At the same time, the female restroom includes one accessible restroom and two standard restrooms. They include two sinks and have adjusted-sized doors to fit a wheelchair inside comfortably.
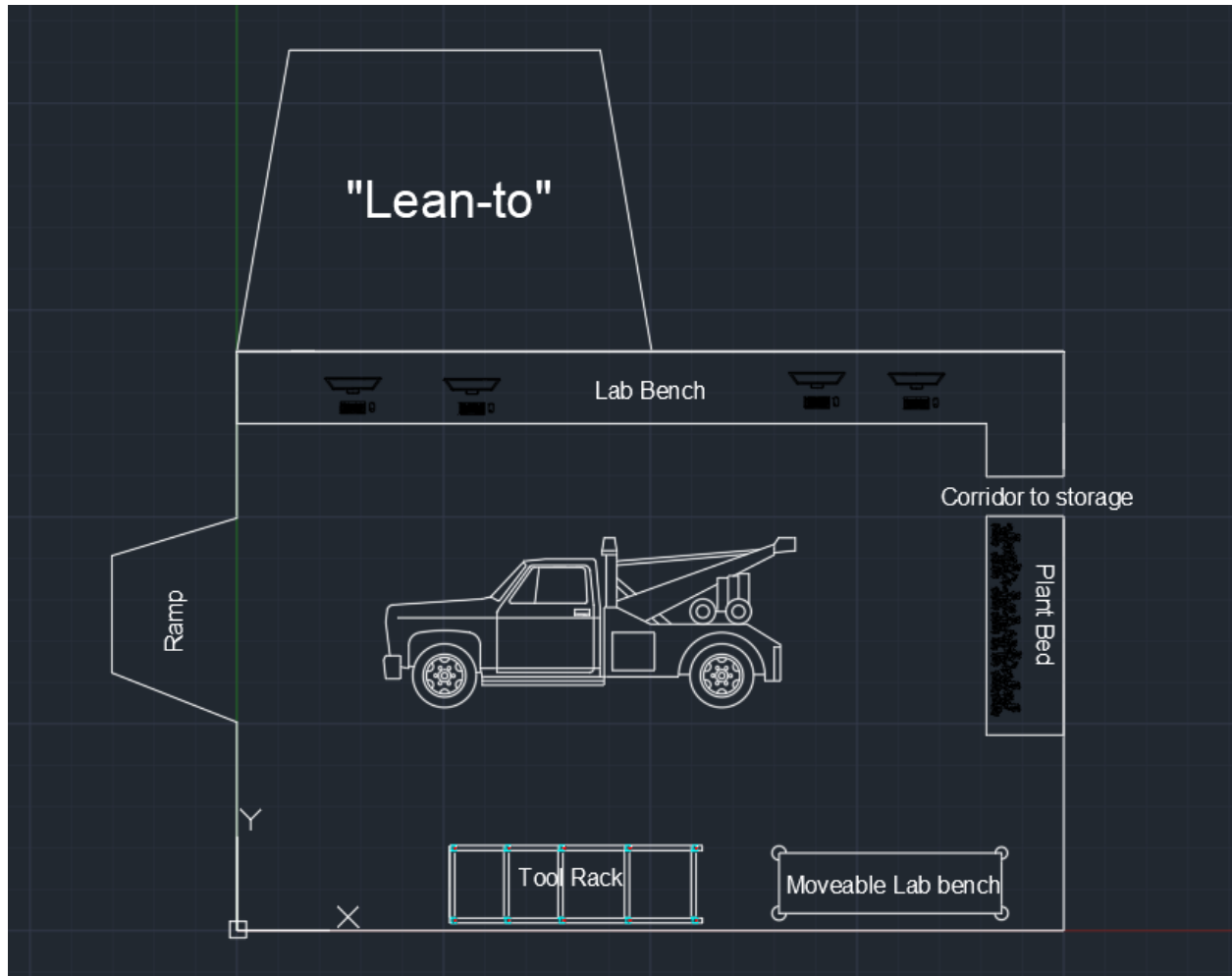
Pros:

- Wheelchair access
- good use of space
- simplicity

Cons:

- Not that spacious
- only three or four restrooms

2.5   Garage with Lean-to

The garage will have a ramp entrance to allow the truck (which can be stored under the lean-to outside) to act as a loading (and de-loading) dock for materials for the lab. There is a plant bed for plant analysis and lab benches with computers. There is a tool rack with regular toolbox tools and harvesting tools that can be effective for fish harvesting and processing animal hides. The garage is roughly 18 feet tall to allow a whole moose hide. A moveable lab bench acts as a mobile workstation that can be brought outside for harvesting. The station is on wheels and can slide down the ramp with ease. The garage is connected to the storage room to ease transportation between materials and avoid overcrowding.
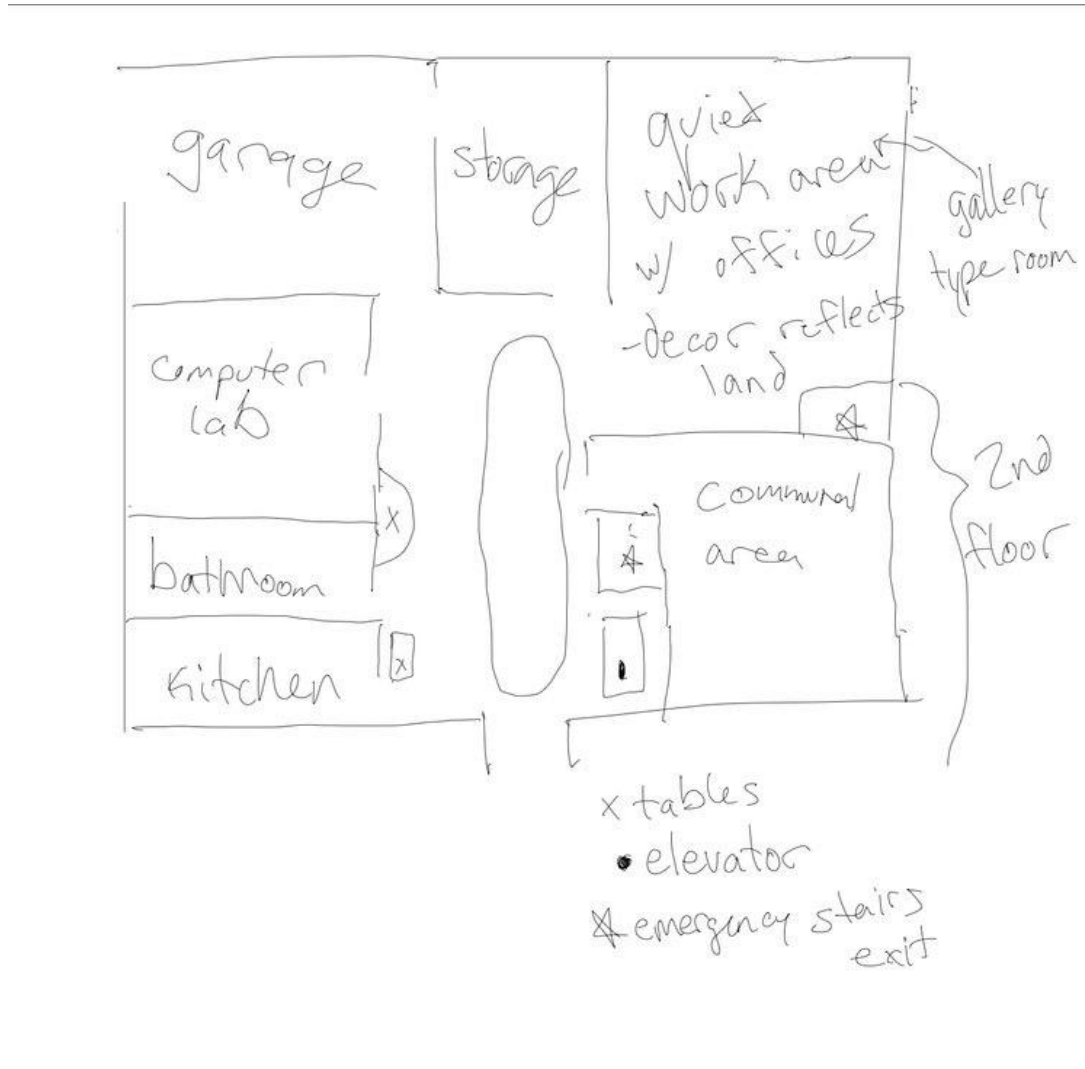
Pros:

- Computers for lab work
- Truck can load and deload
- Materials for processing animals
- Connection to storage room

Cons:

- Not much temporary storage space
- Lean-to can only fit 1-2 trucks underneath

3   Three Subsystems to Focus on

Final first floor plan (office space on 2nd floor above the communal area):

For the future, our group will focus on three subsystems to design in detail: boardroom/communal area, computer lab, and garage with lean-to. These were chosen because they are the most critical subsystems for the purposes of the Guardian program and their projects. We will ask for suggestions for improvement at the upcoming client meet, and incorporate the feedback obtained.

4 Conclusions and Recommendations

Of the 5 subsystem concepts generated, 3 (boardroom/communal area, computer lab, garage) will be our main focus for addition of more detailed features.

5 Wrike Snapshot for the Deliverable

https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=CxGIkhocvLYMdMGw2E63I4ShQGT5ZYpt%7CIE2DSNZVHA2DELSTGIYA