

# Wheatland Lodge And Hospice

Schematic-Design Report

July 6, 2021



berry architecture  
+associates





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## Executive Summary

# EXECUTIVE SUMMARY

The formation of the Wheatland Housing Management Body (WHMB) 60 years ago exemplifies the pioneering spirit that characterizes the people of Wheatland County. WHMB built Wheatland Lodge for their own people, with their own money and their local needs top of mind. Their current lodge was built, maintained, and nurtured as a loving affordable home to care for those whose indomitable spirit forged a strong, enduring community. The replicated grain elevator entrance proposed for the new build is an acknowledgement that seeks to emulate and honour this legacy.

WHMB has concentrated on ensuring all community members are respectfully and fully included in community life. WHMB doesn't believe that seniors' housing should be developed on an island but should instead be in the heart of the community. A recent quote from Doug Griffiths, President and CEO of 13 Ways, sums up a central belief of WHMB's "...if you want to kill your community, shut your seniors out of your downtown; take away their capacity to be directly involved in the most vibrant parts and places of your community ... this is the quickest way to ensure they will not stay in your community". The story of WHMB is one in which they work together to ensure seniors can be active members in the heart of Strathmore. With this understanding, they vigorously sought out the opinions, ideas, and sentiments of the community.

Through a Facebook Live presentation to the community and eight successive community consultations in the autumn of 2020, Berry Architecture and Wheatland Housing reached out to more than 1,000 persons. A portion of that consultation concerned where best to build a new space for seniors in the community. Several sites within the community were thoroughly investigated and presented as options for this new initiative. Repeatedly we heard overwhelming support to choose the undeveloped industrial lands to the east of Kinsmen Lake as the site for a new Seniors' Living space. This site is perfectly located to further the direction of WHMB: seniors will use the parks, spend time at the playgrounds with grandchildren, walk to the nearby locally owned stores, and continue to help strengthen the local community both socially and economically.



This new community will embrace technologies to improve the lives of everyone calling the Wheatland Lodge Community home. This innovative neighbourhood will offer a full spectrum of seniors' accommodation, from fully independent living to memory care support. Through partnership with the Wheatland and Area Hospice Society, our people will be ensured respectful end of life support if desired.

WHMB is committed to the health and well-being of all their residents and, as such, they have sought out every opportunity to maximize the welfare of those who will choose to call this their home. The mechanical system is designed to diminish the impact of contagious outbreaks such as we are currently experiencing. Outdoor spaces lend themselves to interactive environments, and even the stairs are designed to be inviting, safe, and senior-friendly as they are very walkable.

Being connected to the larger community is important to both WHMB and seniors. Thus, Berry Architecture has designed exterior spaces where the community can come to connect with seniors and have also included a bistro with connections from both the interior and the exterior for people to come and enjoy a coffee while also enjoying Kinsman Lake. WHMB has always been about representing and serving the community; and with this project, their strong history of being involved with the community will continue. The hard work and dedication of seniors has created the strengths we currently enjoy in Alberta. WHMB will continue to provide homes for seniors to live in with Pride, Honour, Respect, and Safety. WHMB has a long history that will continue to grow and strengthen their community.





## 1.0 Introduction

# 1.0 INTRODUCTION

## 1.1 INTRODUCTION

This report is designed to provide a project update and a full schematic design summary of the proposed project. The first portion of the report provides a detailed explanation of the project design, the building systems, the site configuration, the environmental features, and the possibility of future expansion on the first phase site. The second portion of the report will be focused on why this project is a good investment for the Province of Alberta and the local region.

## 1.2 PROJECT BACKGROUND

### WHAT HAS HAPPENED?

The Wheatland Housing Management Board (WHMB) engaged the services of Gary Gordon from Gordon & Associates to complete a "Seniors' Housing Needs Assessment and Business Case". Mr. Gordon completed this report in August of 2019 and it was presented and accepted by the WHMB. The study found that there is a current gap in seniors' housing in the region and this gap will continue to expand. The board elected to proceed with the second option presented in this report and felt that it would best serve the residents of Strathmore and region. This option aims to provide 115 lodge suites, 20 SL4, 30 SL4D, and three hospice suites. This option was presented with a proposed project budget of \$51,037,774.

The WHMB has developed a strong collaboration with the Wheatland and Area Hospice Society (WAHS) to provide significant community support for end of life delivered by a rural independent hospice. It is a commitment to a new model of care that addresses discrepancies in rural palliative care access and utilization. WAHS is currently engaged with AHS PEOLC (Palliative and End of Life Care) and AHS IHC (Integrated Homecare) at the Project Management stage.

In the summer of 2020, the WHMB engaged the services of Berry Architecture + Associates to assist them with developing a project program, conduct community information gathering sessions, complete a possible site location search, complete a schematic design exercise to determine the workability of the proposed project, and establish an accurate project budget. Upon the completion of this stage, the true viability of the project can be determined. WHMB is committed to being creative in providing the highest quality of care and support to the seniors in the region.

### WHAT'S HAPPENING NOW?

The new Wheatland Lodge in Strathmore, Alberta is targeting 165 units, with a mix of suite types and sizes. The majority of suites will be Level 2 lodge suites, with approximately 95 single lodge suites and 20 double lodge suites. There will be approximately 20 Designated Supportive Living Suites (Level 4), with 30 suites at Designated Supportive Living Level 4D. The lodge will feature all required amenities and will seek to have a homey, comfortable atmosphere that reflects the culture and social context of Strathmore and the Wheatland County region.

There will be a hospice of approximately six units with a separate entrance and support spaces for families and staff. The hospice will share some facilities with the lodge such as the commercial kitchen, commercial laundry, and exterior amenities. The design focus will be to reduce the visibility of the medical treatment aspects and create a comfortable, homey setting for residents and families while still maintaining efficient functionality for the staff.

## 1.3 VISION

The vision of the project is to develop a dynamic seniors' living community that will provide an all-round living and care opportunity to the seniors of Strathmore and Wheatland County. This new seniors' community will be designed for today but reflect the needs of seniors for years to come. The latest technological features will be implemented into the project to assist with increasing the quality of life for the residents and improving the quality of care that the staff can provide. We focused on developing a facility that will reduce the monthly operating expenses, protect our fragile environment, and demonstrate to the greater community the progressive, holistic approach of this new community. The Wheatland Housing Management Body is a strong leader in seniors' care and living. Through the development of this project and partnerships with the Wheatland and Area Hospice Society and the Province of Alberta, this leadership and growth in improving the quality of life of area seniors will continue.

## 1.4 DESIGN PRINCIPLES

This graphic provides a representation of the three elements that we consider when designing new facilities.

Physical Architecture is the design of the built environment, including interiors, buildings of all scales, and landscape architecture.

Social Architecture is the conscious design of services and amenities to support interactions across generations, cultures, and socio-economic groups.



Economic and Policy are the regulations and financial structures affecting a facility or business.

Throughout our community engagement sessions for WHMB, we sought to focus on the social architecture as it will provide the backbone to the physical architecture. When we connect the social and physical architecture together, we become more design conscious and create meaningful facilities. Lastly, we need to consider the economic and policy component which will guide us to ensure the long term growth and sustainability of a program and/or business.

## 2.0 Community Engagement





# 2.0 COMMUNITY ENGAGEMENT

## 2.1 INTRODUCTION

This provides an overview of the community engagement process for the new Wheatland Lodge. The goals for these engagement sessions were to understand the social and cultural context of Strathmore and Wheatland County and to empower the community to shape the project vision. There were five live online community engagement sessions, one per week, from October to November, 2020. These sessions have been uploaded to the website for people to view on their own time if they were unable to attend the live event.

A summary of each week's session is found on the following pages. We used a series of videos and power point presentations to explain the planning process and the work to be completed throughout the engagement process. We encouraged people to visit this page often and share this website with anyone who should have a voice in the planning. We were looking for real and honest input!

We encouraged people to visit each session page at any time to give us their feedback, but we also noted that this will not be the only way or chance for residents and stakeholders to participate. Polls and questionnaires were made available from Thursday evenings to Mondays at noon to gather additional information from the community. We have recorded and documented all the responses, and they will all be considered and reviewed continually during the project design process.



## 2.2 INTENT OF THE COMMUNITY ENGAGEMENT

The intent for each of the community engagement sessions was to answer the big question: ***How does the built environment promote healthy living and sustainable communities?*** The answers to this question will help drive the site selection, develop the program requirements, and create the start for the schematic design for the new lodge and hospice care facility. We started on the macro scale (with the site context) and then worked our way inward to the micro scale (resident suites) through the five sessions. Our goals for the community engagement sessions are to develop an understanding of the social and cultural context of Strathmore and Wheatland County and to empower the community to shape the project vision.



## 2.0 COMMUNITY ENGAGEMENT

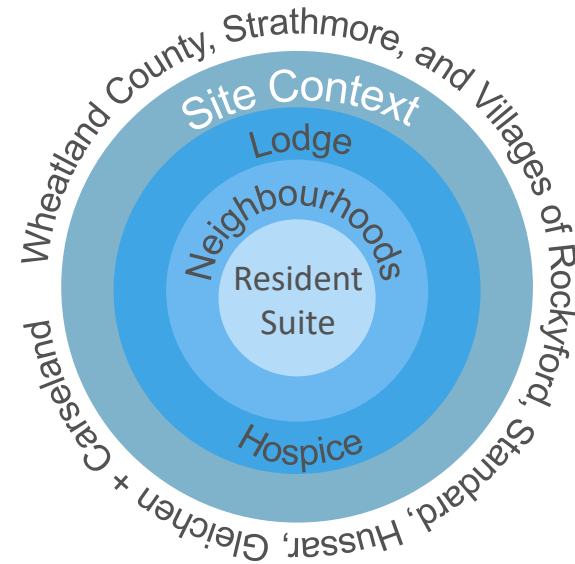
### 2.3 PROJECT BACKGROUND

Wheatland Housing Management Body (WHMB) is a Management Body under the Alberta Housing Act and represents Wheatland County, including all its villages and hamlets.

WHMB operates 138 housing units for seniors and the 95-unit Wheatland Lodge in Strathmore. There are also 20 units in four of the rural hamlets.

Wheatland Lodge was constructed in the early 1960s and has undergone several renovations and additions over the years. While the building is in good condition and the seniors are happy with the accommodation, it does not meet today's standards or the expectations of the upcoming generation. Given existing site constraints around Wheatland Lodge, it is not feasible to rebuild adjacent to the existing building. The best option is to build on a different site in the Town of Strathmore.

# 2.0 COMMUNITY ENGAGEMENT



## NEW LODGE HIGHLIGHTS



### 165 SUITE LODGE

- 95 Lodge Single Suites (Level 2)
- 20 Lodge Double Suites (Level 2)
- 20 Designated Supportive Living Suites (Level 4)
- 30 Designated Supportive Living Suites (Level 4D)



### HOSPICE CARE

- Dedicated Hospice Care Unit
- Up to 6 suites
- Amenities to support families and staff



### ARCHITECTURAL DESIGN

- Multi-Storey Building
- Residential Design
- Located in Strathmore

October 8  
SITE  
CONTEXT

Live Session Zoom  
Attendance: 51

Questionnaire: 22  
Ages: 40-79  
Location:  
Strathmore  
Carseland  
Wheatland County  
Rockyford  
Cheadle

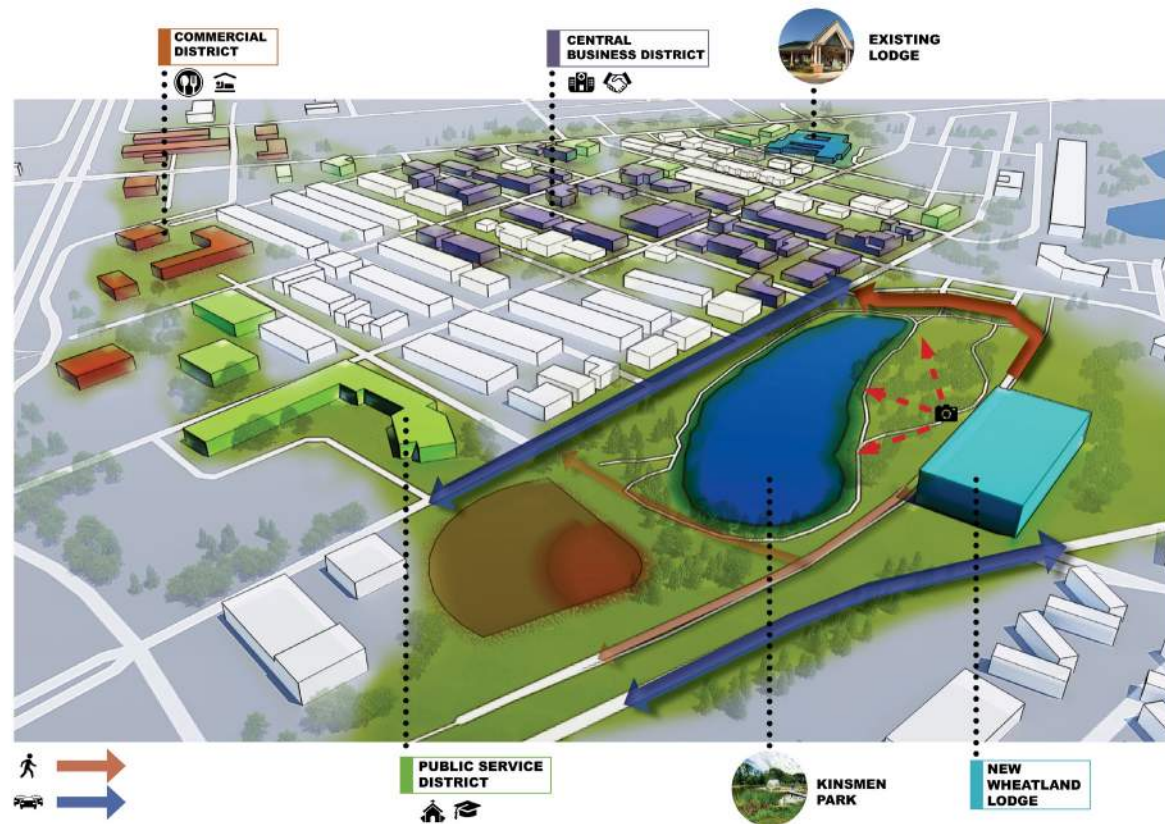
## 2.1 ENGAGEMENT SESSION #1: SITE CONTEXT

During the first community engagement session, we provided the project background and the new lodge highlights, we spoke about the important design principles that will be considered through all of the community engagement sessions, and then we dove into the main discussion: **How does the built environment promote healthy living and sustainable communities** as it relates to the site context?

Our goals for the community engagement sessions are to understand the social and cultural context of Strathmore and Wheatland County and to empower the community to shape the project vision.

# 2.0 COMMUNITY ENGAGEMENT

## SITE CONTEXT DESIGN PRINCIPLES



While the exact site for the new Wheatland Lodge has not been identified yet, we looked for input to define what are the important characteristics the site must incorporate to answer our question, ***How does the built environment promote healthy living and sustainable communities?*** The following four design principles are items we consider when thinking about what is important as we discuss the site context.

- **Functional Independence:** The outdoor environment supports individuals' remaining abilities with dignity and respect.
- **Engagement:** The site context creates opportunities for stimulating and meaningful activities and fosters healthy relationships between residents and their community.
- **Health and Safety:** Outdoor design elements are responsive to the aging body by providing opportunities to support physical and mental health while minimizing risks.
- **Quality of Life:** The outdoor environment will foster socialization, emotional well-being, and a sense of self and will support lifelong interests.

## WHAT BERRY HEARD

During the first community engagement session, Berry Architecture gathered information by asking questions/polling to help us gain additional information for this project.

## WHAT IS YOUR IDEAL LOCATION FOR THIS PROJECT?

- **Urban**
- Downtown
- Close to Services
- Central Location



## ARE THERE SPECIFIC AMENITIES THAT SHOULD BE WITHIN WALKING DISTANCE OF THE FACILITY?

- **Medical Services**
- Library
- Grocery Stores
- **Shopping**
- Bank
- Pharmacy
- Coffee Shops
- **Walking Trails**
- Recreational Facilities
- Physiotherapy
- Chiropractor Care



# 2.0 COMMUNITY ENGAGEMENT

## WHAT ARE THE IMPORTANT SITE AMENITIES TO YOU?

- Gathering space for families
- Flower Garden
- **Vegetable Garden**
- Pickleball Court
- Horseshoes
- Greenhouse
- Farmer's Market
- **Covered Patio**
- **Covered Parking**
- Pond



## SUMMARY:

In Session # 1, which happened on October 8, 2020, Berry Architecture focused on the site context. While the exact site for the new Wheatland Lodge has not been identified yet, Berry Architecture gathered feedback regarding the important characteristics that the site must have. Those elements are that the site must be in an urban setting close to medical services, shopping, and walking trails. There were also several requests to have a vegetable garden, patio area with a cover, and covered parking. One positive item was the desire to have the outdoor facilities available to both the residents as well as the general public. This was not a resounding response, but it is certainly possible to create both private spaces for the residents, as well as having public spaces available for the larger community to use.

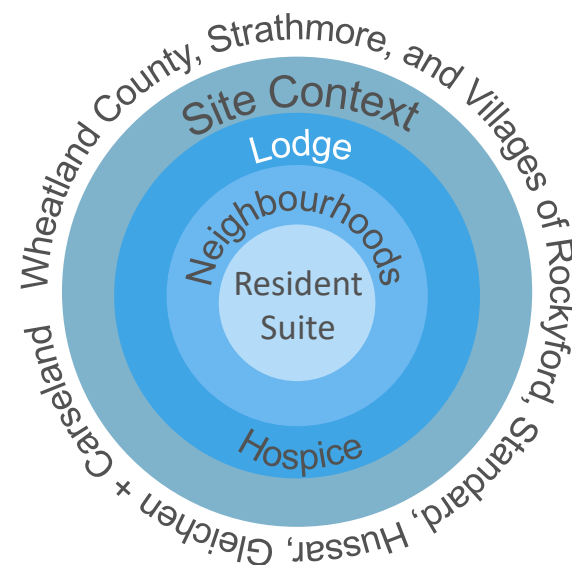


## SHOULD THE OUTDOOR AMENITIES BE ACCESSIBLE TO ALL MEMBERS OF THE COMMUNITY OR ONLY ACCESSIBLE TO RESIDENTS OF THE FACILITY?

- Private: 46% (12/26)
- **Balance of Both: 53% (14/26)**
- Public: 0% (0/26)



# 2.0 COMMUNITY ENGAGEMENT



## LODGE COMMON AREA DESIGN PRINCIPLES

Just as we laid out the four design principles for the site context, we will use the same four principles but directed towards the interior to help us determine what are the important design decisions and amenities that Berry Architecture needs to consider.

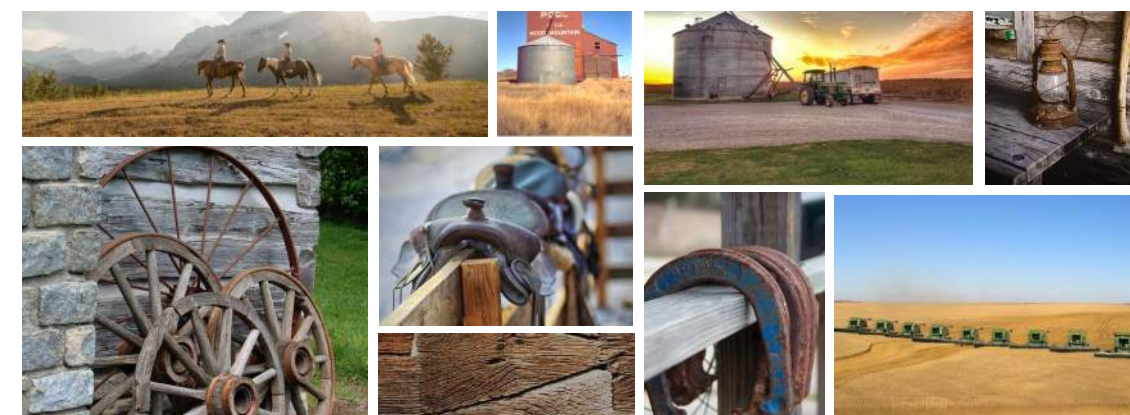
- **Functional Independence:** The built environment supports individuals' remaining abilities with dignity and respect.
- **Engagement:** Indoor environments create opportunities for meaningful activities and foster relationships.
- **Health and Safety:** Interior design elements and furnishings are responsive to the aging body and minimize risks.
- **Quality of Life:** The built environment will foster socialization, emotional well-being, a sense of self, and will support lifelong interests.

## WHAT BERRY HEARD

During the second community engagement session, Berry Architecture gathered information by asking questions/ polling to help us gain additional information for this project related to Common Spaces.

## WHAT IMPORTANT ELEMENTS OF THE HISTORY + CULTURE OF STRATHMORE AND WHEATLAND COUNTY SHOULD BE REPRESENTED IN THE NEW FACILITY?

- Small Town Camaraderie
- Western Heritage
- Prairie Landscapes
- **Agriculture + Farming**
- Ranching
- Railroad
- Rodeo



## ARE THERE ANY IMPORTANT FEATURES IN THE CURRENT WHEATLAND LODGE THAT SHOULD BE ACCOMMODATED IN THE NEW FACILITY?

- **Legacy Quilt**
- **Covered Patio Areas**



October 15  
COMMON  
AMENITIES

Live Session  
Zoom Attendance  
: 46

Questionnaire: 10  
Ages: 50-89  
Location:  
Strathmore  
Carseland

## 2.2 ENGAGEMENT SESSION #2: COMMON SPACES

During this session, Berry Architecture spoke about the common areas in the lodge.

The goal for this engagement session was to understand the social and cultural context of Strathmore and Wheatland County in order to shape the project vision. With your input, Berry Architecture is working together to look at the different levels of social architecture as it will shape the physical architecture, starting with the site context (discussed in Session 1) and now working our way to the public spaces of the new lodge.

Once again, Berry Architecture will use the question, *How does the built environment promote healthy living and sustainable communities* as it relates to the communal spaces in the lodge? While we are answering this question, Berry Architecture also wants you to consider how these design decisions can foster strong relationships between residents and the community, residents and the staff, and residents with the other residents. The amenities inside the lodge are important spaces that we need to understand because they will support the daily life of each resident living in this building.

# 2.0 COMMUNITY ENGAGEMENT

## WHAT AMENITIES COULD IMPROVE THE DAILY LIFE OF STAFF?

- **Larger Commercial Kitchen**
- Facility Storage
- Shipping and Receiving Area
- Maintenance Shop
- Mechanical and Electrical room access located in the back of house



## HOW CAN WE ENCOURAGE PHYSICAL ACTIVITY AMONG RESIDENTS INSIDE THE NEW LODGE?

- Senior-friendly staircases
- **Indoor and Outdoor** walking loops with distances marked and destinations along the way
- Gym with access to equipment and quality programming (dance, yoga, games, etc.)



## WHAT AMENITIES COULD IMPROVE THE DAILY LIFE OF RESIDENTS?

- Arts and Crafts Studio
- Art Gallery
- Automatic Doors
- Chapel and Spiritual Space
- Community Meeting Space
- Computer Room
- **Family Kitchen and Dining Room**
- Games Room
- Hair Salon
- Intimate spaces for cake and coffee
- **Large Entry/ Foyer**
- Library
- Meditation Room
- Music Room
- Private Spaces for conversation
- **Pub**
- Theatre Room
- **Tuck Shop and Gift Shop**
- Wellness Services (Doctor, Foot Care, Massage, Physio)
- **Wi-Fi**
- Woodworking/Garage Studio



## WHAT TYPES OF SPACES ARE IMPORTANT FOR REFUGE AND PRIVACY?

- **Library with a door and soft furnishings**
- **Quality views to the outdoors**
- Chapel and Counselling Rooms
- Comfortable resident suites
- Intimate spaces



## SUMMARY:

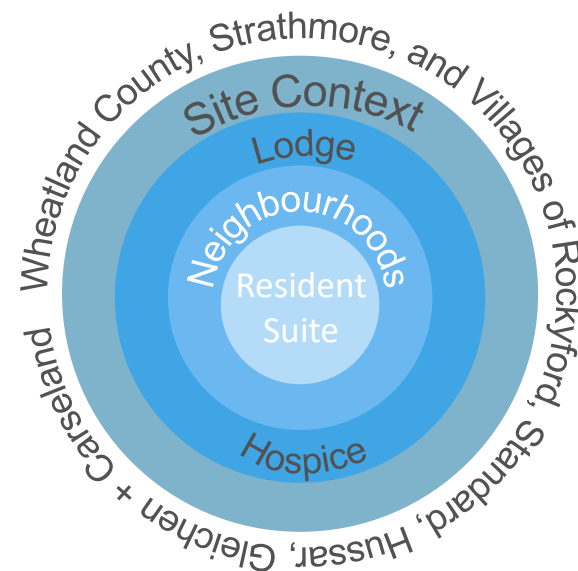
In Session # 2, which took place October 15, 2020, Berry Architecture focused on the common spaces of the lodge. The amenities inside the lodge are important spaces that we need to understand to get the design correct to support the daily life of each resident living in this building. There were several important common areas that are needed in the new facility to support the daily living and quality of life of the residents and the staff working there. A design feature that was strongly highlighted was that people felt it was important to ensure that the new facility had a strong connection to the history of the farming and agriculture in the region. This design theme can be incorporated into the common areas that we heard were needed.

These common areas include a covered patio, a location for quilts and in particular the legacy quilt, and a larger and modern commercial kitchen for the staff. Items to directly improve the daily life of residents include a family kitchen and dining room, a warm and inviting pub, a tuck/gift shop, and high speed Wi-fi for the whole facility. The entry to the facility was also very important, and people indicated that they wanted a larger, friendly foyer--a space where people can gather and where seniors can wait in comfort for their guests to arrive.

Physical activities are also important, and people indicated that they would like to see a variety of both indoor and outdoor activity hubs.



# 2.0 COMMUNITY ENGAGEMENT



## NEIGHBOURHOOD AND RESIDENT SUITES DESIGN PRINCIPLES

There are four design principles that will help us determine what are the important design decisions Berry needs to make; they will also help guide us through the design process and into the construction of the facility to ensure that Berry delivers what the community needs and wants.

- **Functional Independence:** The built environment supports individuals' remaining abilities with dignity and respect.
- **Engagement:** Indoor environments create opportunities for meaningful activities and foster relationships.
- **Health and Safety:** Interior design elements and furnishings are responsive to the aging body and minimize risks.
- **Quality of Life:** The built environment will foster socialization, emotional well-being, a sense of self, and will support lifelong interests.

## DESIGN CONCEPT

"Whales and peas live in pods, people live in neighbourhoods"--we will be introducing a new language when we are speaking about seniors' facilities. We will be talking about neighbourhoods and villages, and the term "lodge" will be replaced with "community". We do not design "home-like" spaces, we design homes. We want to get away from negatives and highlight that our seniors remain strong and contributing members of our society. They live in a community and are part of everyone's community. These terms align with "person-centred" care models.

Designing for seniors' living has changed a lot over the last decade. As we understand more about the aging body, mental health, and different care models, the way we design and talk about seniors' living has changed as well. Berry is striving to change the perception of long-term care facilities and assisted living from being institutional and hospital-like to creating small homes where intentional communities are developed and high levels of care are the norm.

October 22  
NEIGHBOURHOODS  
+ SUITES

Live Session  
Zoom Attendance :  
38

Questionnaire: 10  
Ages: 30-79  
Location:  
Strathmore  
Hussar  
Langdon  
Rockyford

## 2.3 ENGAGEMENT SESSION #3: NEIGHBOURHOODS AND SUITES

During the third session, Berry Architecture focused on "neighbourhoods" and resident suites.

The goal for this engagement session was to understand the social and cultural context of Strathmore and Wheatland County in order to shape the project vision. With the input gathered, we are working together to look at the different levels of social architecture as it will shape the physical architecture. We started with the site context (discussed in Session 1), then we moved inward to the communal/common spaces during Session 2, and now we are looking at the resident neighbourhoods and suites.

Once again, Berry Architecture used the question, *How does the built environment promote healthy living and sustainable communities* as it relates to the **resident neighbourhoods and suites**? While we are answering this question, Berry Architecture will also consider how these design decisions can foster strong relationships between **residents** and the **community, residents** and the **staff**, and **residents with other residents**. The resident neighbourhoods and suites inside the lodge are important spaces, we need to get them right because they will support the daily life of each resident living in the building.



# 2.0 COMMUNITY ENGAGEMENT

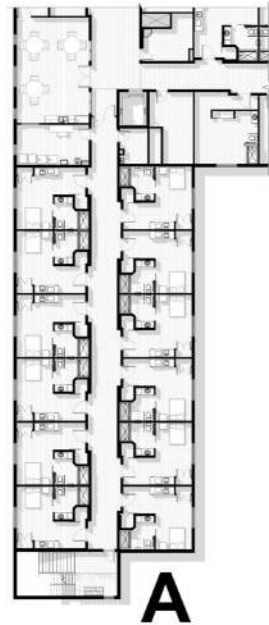
## WHAT BERRY HEARD

During the third community engagement session, Berry Architecture gathered further research by asking questions/ polling to help us gain additional information for this project.

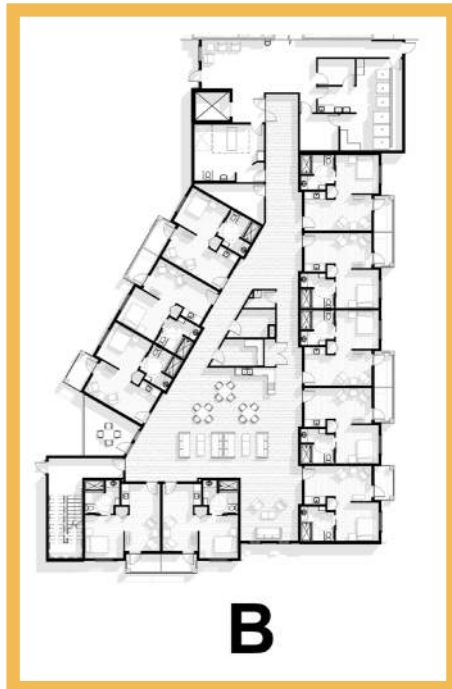
## WHICH TYPE OF NEIGHBOURHOOD STYLE DO YOU PREFER?

- **All responses received preferred layout 'B'**

Using a neighbourhood model with amenities like kitchens, living rooms, and gathering spaces helps to maximize the flexibility of the neighbourhood – for example, the neighbourhood can be used for memory care or supportive living. Additionally, this type of space planning will be beneficial for future influenza or pandemic outbreaks by creating cohort families. Residents will not be limited to their private room for activities and meals because they will be able to use the amenities within their neighbourhood.



**A**



**B**



## WHAT AMENITIES OR FEATURES SHOULD BE INCLUDED IN EACH NEIGHBOURHOOD?

These amenities and features had been discussed and will also be considered and integrated into the planning of the hospice care facility.

- Space for puzzles
- Computers
- TV
- **Small Kitchen**
- **Breakout Dining Areas**
- Water Bottle Refill Station
- Sound Control
- Built-in Speakers
- **Warm, inviting colours**
- Quality Lighting
- Natural Light
- Community Bulletin Board
- **Access to outdoor patio**
- Blended in staff area
- Housekeeping



## WHAT ARE THE IMPORTANT FEATURES OF THE NEW RESIDENT SUITES THAT SHOULD BE CONSIDERED?

- **Walk-in Shower**
- Fold-able shower seat
- Privacy Wall to hide sleeping area
- Floating shelves above/ near bed
- Heated flooring
- **Large window(s)**
- **Luxury Vinyl Tile flooring**
- Non-slip flooring
- Carpet under the bed
- **Kitchenette** (fridge, microwave, coffee maker)
- Dimmable lights
- Light switch near bed
- **Storage for clothing and personal items**
- Wall mounted TV with swivel
- Computer Desk
- Storage in bathroom for personal items and linens
- Keyless entry
- **Wi-Fi**
- Space for two lounge chairs
- Space for small dining table



# 2.0 COMMUNITY ENGAGEMENT

## WHAT DOES HOME MEAN TO YOU?

- **Sanctuary**
- Warmth
- Comfortable
- **Safe Haven**
- Familiar
- Soft Furnishings
- Mementos
- **Memories**
- Cooking
- Baking
- People
- Solitude
- Peace
- Calm
- Welcoming
- **Relaxing**
- Private
- Joy



## Resident Suite Example

- Accessible washroom
- Kitchenette
- Private Bedroom
- Patio
- Living and Dining Space
- Storage



## SUMMARY:

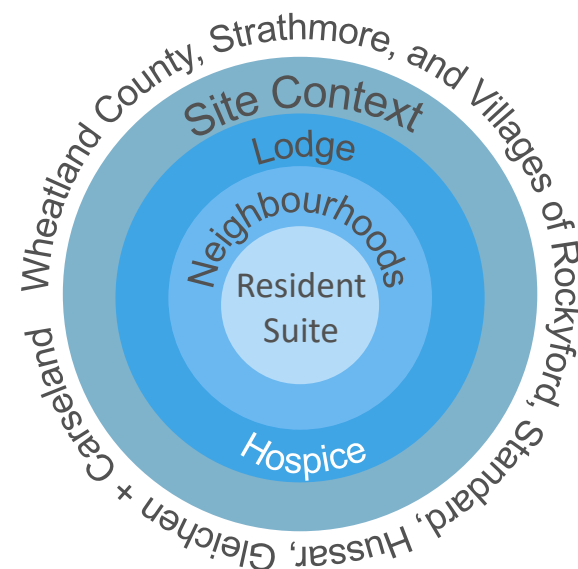
Session # 3 took place on October 22, 2020. During this session, Berry Architecture focused on the neighbourhood and resident suites and the amenities inside the lodge. These important spaces support the daily life of each resident living in this building.

Some of the features that were highlighted and noted as important during this discussion were that people want to see a small kitchen and dining area in each neighbourhood. They also wanted to ensure that the facility is filled with warm, rich, and inviting colours that stimulate growth and activity. As noted in a previous session, a strong connection to the exterior is needed as the current residents here like to spend time outdoors.

One discussion that brought up an interesting interaction was about the design of the suite itself and how we could make it a true home. We will be designing the suites to have large windows, LVT flooring, a small kitchenette, storage directly in the suite for personal items, and as previously mentioned a strong Wi-Fi. Creating home is extremely important; we want to create a sanctuary that can become a safe haven for the residents, one in which they can relax and socialize with friends and family to create lifelong memories.

This was a great discussion, filled with incredible design ideas, and it demonstrates just how committed the people of Strathmore and Wheatland County are to this new facility. They understand that a new facility is needed and that the seniors in the area deserve to live in a facility that will enhance their lives and be a great place for them to call home.

# 2.0 COMMUNITY ENGAGEMENT



## WHEATLAND AND AREA HOSPICE SOCIETY

The Wheatland and Area Hospice Society (WAHS) was formed in 2015 to support the dream of creating a hospice for Wheatland and surrounding area. Building upon the foundation laid by the Cheadle Lions Club, WAHS grew within the Wheatland community and established partnerships with Alberta Health Services (AHS) and other organizations in the area.

### Vision

Recognizing death as a part of life, we aspire to:

- Be a dedicated, caring community
- Provide access to compassionate, high-quality care at the end of life's journey.

### Mission

To provide hospice care to those in their final stages of life through:

- Programs and services
- Support to families
- Facility development.



October 29  
HOSPICE CARE

Live Session Zoom  
Attendance : 34

Questionnaire: 3

Ages: 18-69

Location:

Strathmore

Carseland

## 2.4 ENGAGEMENT SESSION #4: HOSPICE CARE

During the fourth session, Berry Architecture focused on the hospice care facility. We heard great ideas presented on how we should design and establish a hospice care facility in concert with the new Wheatland Lodge.

The goal for this engagement session was to understand the social and cultural context of Strathmore and Wheatland County in order to shape the project vision. With the input gathered, we are working together to look at the different levels of social architecture as it will shape the physical architecture. Berry started with the site context in Session 1, then moved inward to the communal/common spaces during Session 2, and then the resident neighbourhoods and suites during Session 3. This evening, we discussed the different levels of social architecture as it relates to the hospice care facility.

Berry Architecture will continue to use the question, **How does the built environment promote healthy living and sustainable communities** as it relates to the **hospice care facility?** While we are answering this question, we also want to consider how these design decisions can foster strong relationships between **staff, residents, families, and the community.** Even though people stay in hospice for short periods of time, it is important to foster relationships to ensure family and friends have the right support they need when dealing with the imminent death of a loved one.

## WHAT IS PALLIATIVE CARE?

- A philosophy of care with a focus on helping people feel and function as well as possible while living with a progressive, usually incurable illness
- Can take place at home or in a hospital setting
- Typically starts between 3 - 12 months before death.

## WHAT IS HOSPICE CARE?

- Care provided to an individual and their family when they are approaching a period of time closer to death. Services aimed at comfort are intensified
- Typically starts two weeks before death.

# 2.0 COMMUNITY ENGAGEMENT

## HOSPICE CARE FACILITY DESIGN PRINCIPLES

For the Hospice Care Facility, Berry will use the same four design principles that we used for the lodge to help us determine what are the important design decisions. These principles will also help guide us through the design process and into the construction of the facility to ensure that we deliver what the community needs and wants.

- **Functional Independence:** The built environment supports individuals' remaining abilities with dignity and respect.
- **Engagement:** Indoor environments create opportunities for meaningful activities and foster healthy relationships.
- **Health and Safety:** Interior design elements and furnishings are responsive to both the mental and physical health of people.
- **Quality of Life:** The built environment will support emotional well-being and the social, cultural, and spiritual needs of each person and family.



## WHAT BERRY HEARD

During the fourth community engagement session, Berry Architecture gathered information by asking questions/polling to help garner information for the hospice portion of this project.

## HOW CAN THE BUILT ENVIRONMENT SUPPORT THE EMOTIONAL WELL-BEING OF FAMILY AND FRIENDS?

- Small, quiet, relaxing space
- **Private Garden**
- Grief and Support Meeting Rooms
- **Spiritual Care Room**
- Family Kitchen to cook and grab snacks
- Dining Room
- Access to amenities in the lodge like the Pub
- **Shower Room**
- Resident Laundry
- Quality Wi-Fi
- Computer Stations
- Child Minding/safe place for children



## HOW CAN THE DESIGN SUPPORT STAFF, INCLUDING VOLUNTEERS, TO ENSURE THEIR PHYSICAL AND MENTAL HEALTH NEEDS ARE BEING MET?

- **Staff Room** with soft furnishings, quality views, kitchenette, washroom
- Ergonomic storage for medical devices, medication, secure file storage
- Public education room to be accessed by all
- Shock absorbing flooring



## WHAT TYPES OF DESIGN ELEMENTS IN THE RESIDENTS' ROOMS WOULD ENHANCE THEIR QUALITY OF LIFE?

- Full height windows
- Garden door out to a **Private Garden**, wide enough to wheel a bed through the door
- Whiteboard to write messages
- Lockable Storage
- **Pull-out bed for family and friends** to stay the night
- Variety of designs for each room
- Colours
- Ground floor suites
- Kitchenette
- **Soft, comfortable furniture**
- **Quality Views and Sunshine**
- Hidden medical devices
- Soft, warm lighting/dimmable



# 2.0 COMMUNITY ENGAGEMENT

## HOW SHOULD THE LODGE AND HOSPICE BE CONNECTED?

- **Separate Entrances**
- Separate Spiritual Care Rooms
- Separate family kitchen and living room areas
- Separate Medical Storage
- Separate Staff Rooms
- **Shared Commercial Kitchen**
- Shared Commercial Laundry
- **Shared operational items** like landscaping, snow removal, parking, utility spaces
- Private corridors to connect the two facilities together
- Visually separate the facilities with internal back of house connections



## SUMMARY:

Session # 4 took place on October 29, 2020, with the focus being completely on the hospice care facility. Berry Architecture heard great ideas on how we should design the facility and how the Hospice should be further developed and integrated into the new Wheatland Facility. The discussion about the end of life care and respect was very productive and educational for most people on the call.

Some of the highlights that came out of the discussion were that the overall Hospice should be designed as a warm and inviting space that will support the families during this often stressful and sad time in our lives. The importance of supporting the staff and volunteers came through loud and clear. We will be ensuring that a staff/volunteer retreat room is created. This space will have a soft and warming quality that will provide a retreat for the staff members to relax and take some important time for themselves.

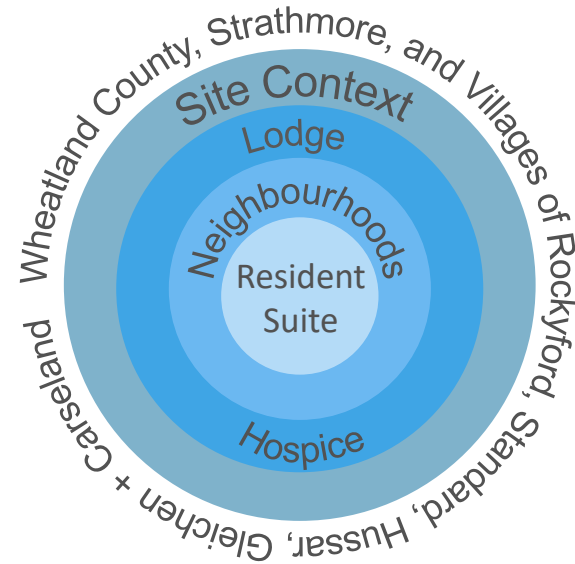
We need to have a private garden area and spiritual care room designed for a variety of usages from family gatherings to quiet reflective space. The scale and finishes in these areas will be critical.

The hospice rooms should have full height windows, a small exterior private patio or garden, sleeping options for family members (such as a Murphy bed), and soft, comfortable furniture. The furniture should also be senior or end of life friendly; it should be easy for people to get in and out of.

After considerable discussion, it was decided that the Hospice would have its own entry and identification. The entry should be impressive and reflect the contribution that these people have made to the community. We will also be including a strong exterior garden component as part of the entry. There was discussion around having a location for hanging quilts, wall coverings, or other possible memorial gifts. While the Hospice would have its own identity, it would still share back of house operations, such as laundry, mechanical and electrical systems, and possibly even some joint operations.

It is very clear that the Hospice is an important element of this development and that the people of Strathmore and Wheatland County will truly support and care for this facility. As we evolve the facility design, the connection and interaction between these two spaces will be further developed.

# 2.0 COMMUNITY ENGAGEMENT



## WHAT BERRY HEARD

During the fifth community engagement session, Berry Architecture summarized all of the gathered information from the questions/polling asked in the previous four sessions to ensure we had heard all of the input that the community had to provide for this project.

## ADDITIONAL COMMENTS

Some additional comments brought forward in this session were:

- There should be a planned office for the home care nurse. Home care needs a separate office from administration as clients stop by the office to talk about their health and for private conversations that do not always happen in their rooms.
- Furniture in the common areas needs to have soft edges.
- The hospice rooms could have Murphy beds built in for overnight family and caregivers.
- Could there be closets at entrances for coats and shoes?
- Add a window beside the balcony door for lighting in the seating area of suites.
- For the Hospice, what about a separate guest suite with a minimum per night charge for out of town visitors?

November 5  
SUMMARY

Live Session  
Zoom Attendance:  
31

Questionnaire: 2  
Ages: 60-69  
Location:  
Wheatland County  
Strathmore

## 2.5 ENGAGEMENT SESSION #5: SUMMARY

During the fifth session, Berry Architecture did a full summary of what we heard throughout the previous four sessions. Berry compiled all of the great ideas that we heard from the community about how Berry should design and develop the new Wheatland Lodge and Hospice Care Facility.

The goal for the engagement sessions was to understand the social and cultural context of Strathmore and Wheatland County in order to shape the project vision. We looked at the different levels of social architecture in order to allow us to shape the physical architecture. We started with the site context in Session 1, then we moved inward to the communal spaces during Session 2, resident neighbourhoods and suites during Session 3, and then the hospice care facility in Session 4.

For each of the topics, we strove to answer the question: **How does the built environment promote healthy living and sustainable communities?** We considered how these design decisions can foster strong relationships between staff, residents, families, and the community.



## 3.0 Site Analysis

# 3.0 SITE ANALYSIS

## 3.1 ZONING

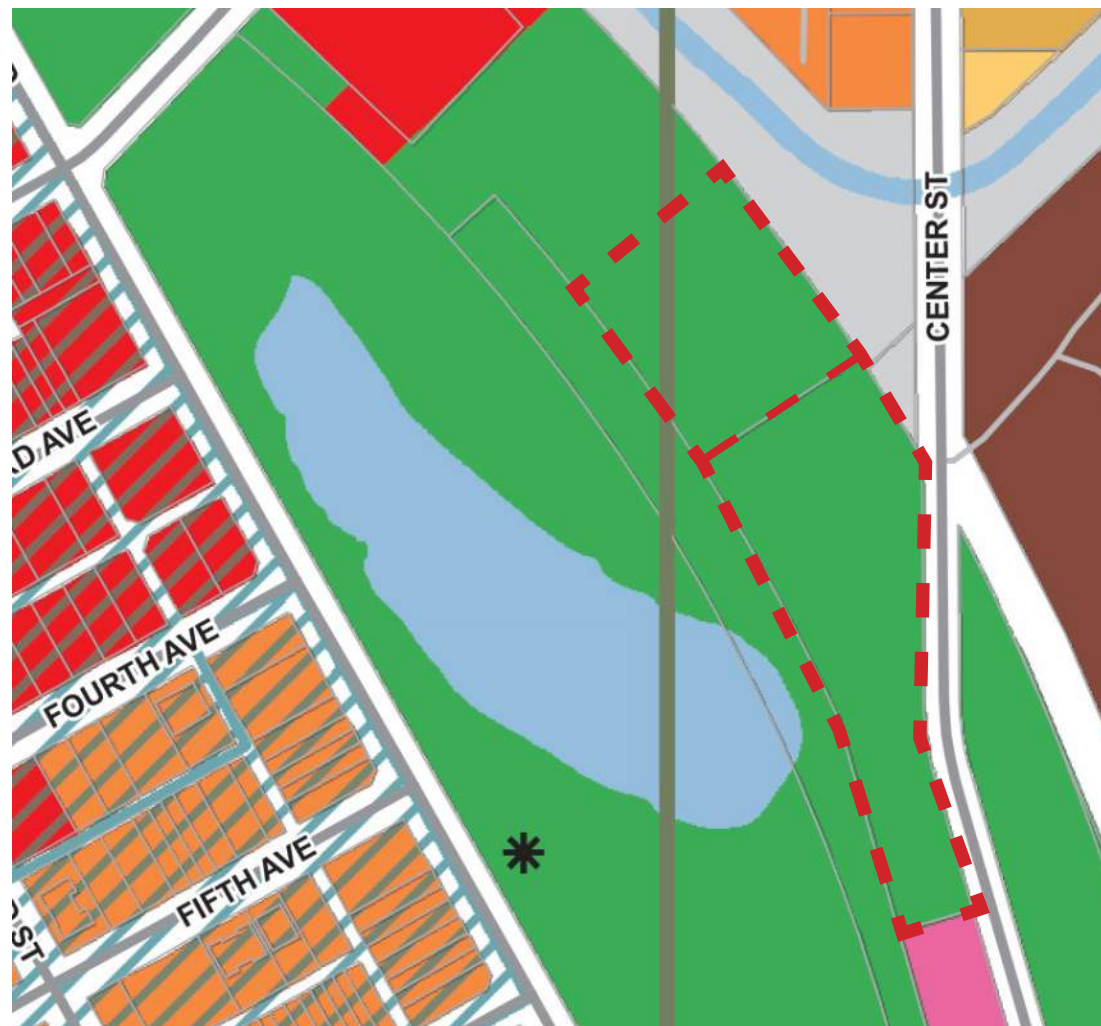
The site is currently zoned as: Public Service District (P1).

The current zoning of the site allows for Seniors' Housing to be built and no re-zoning will need to be considered. All of the site requirements in this District shall be at the discretion of the Approving Authority; Berry Architecture would work with the Town of Strathmore Planning and Development department directly with this new project. Neighbouring zones include: Highway Commercial District (CHWY), Central Business District (CB), Manufactured Home Park District (MHP), High Residential District (R3), and Public Service District (P1).

The Kinsmen Park pond runs along the west side of the property.

## 3.2 BY-LAW

Lot Area: 16,802 sq.m.  
Building Footprint: 4,235 sq.m.  
Site Coverage: 25%





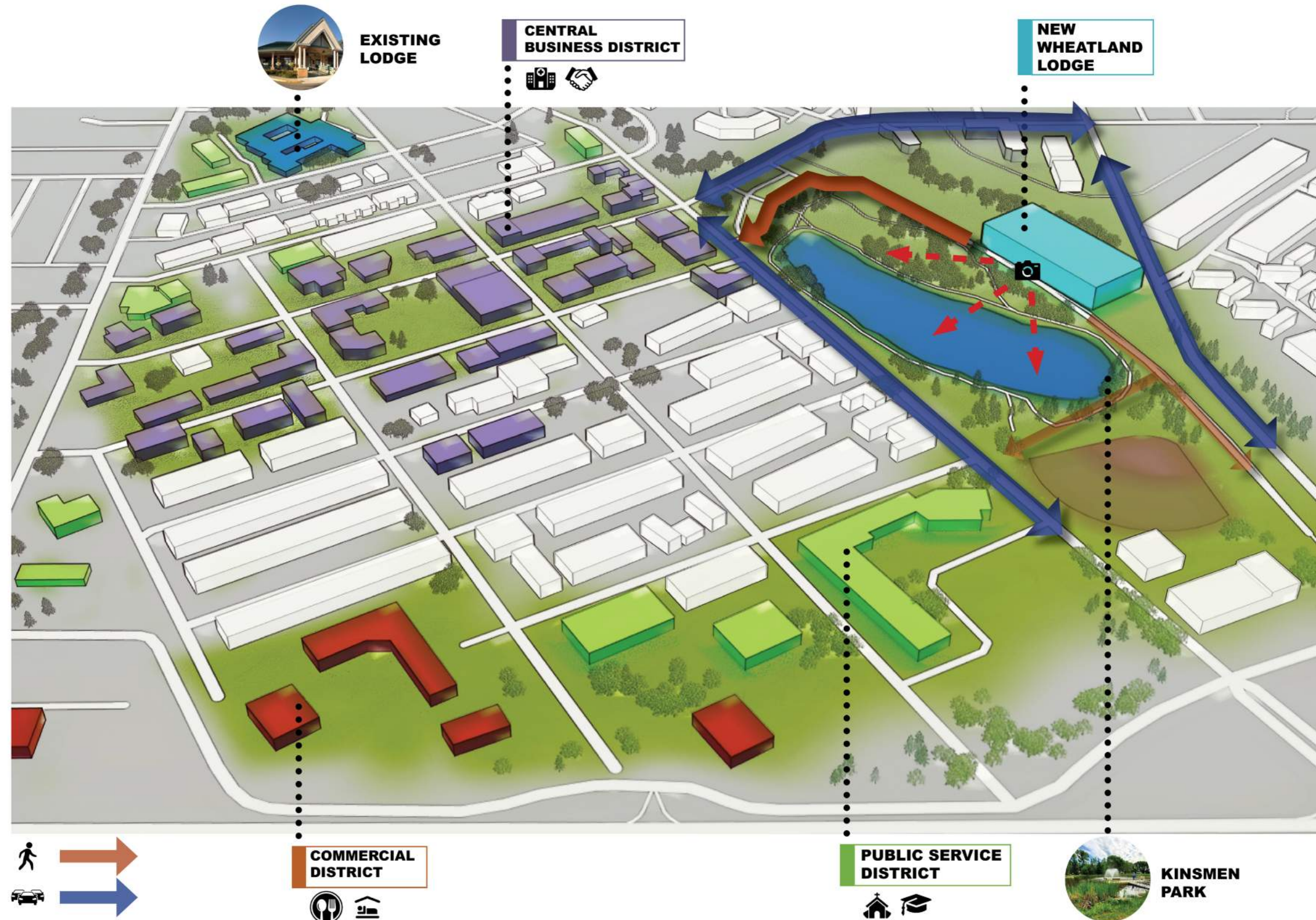
# 3.0 SITE ANALYSIS

## 3.3 EXISTING SITE CONDITIONS



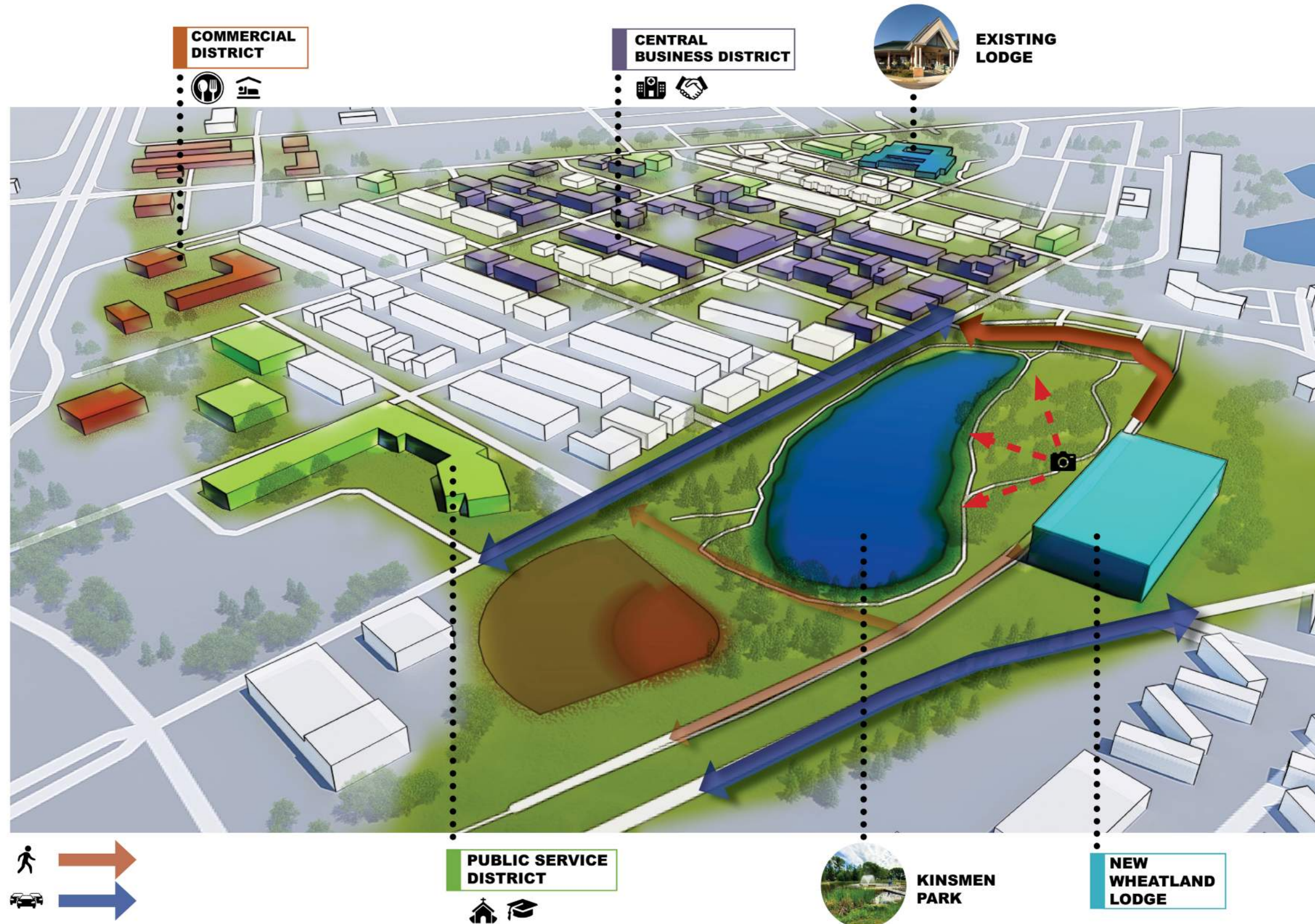
# 3.0 SITE ANALYSIS

## 3.4 SITE CONTEXT



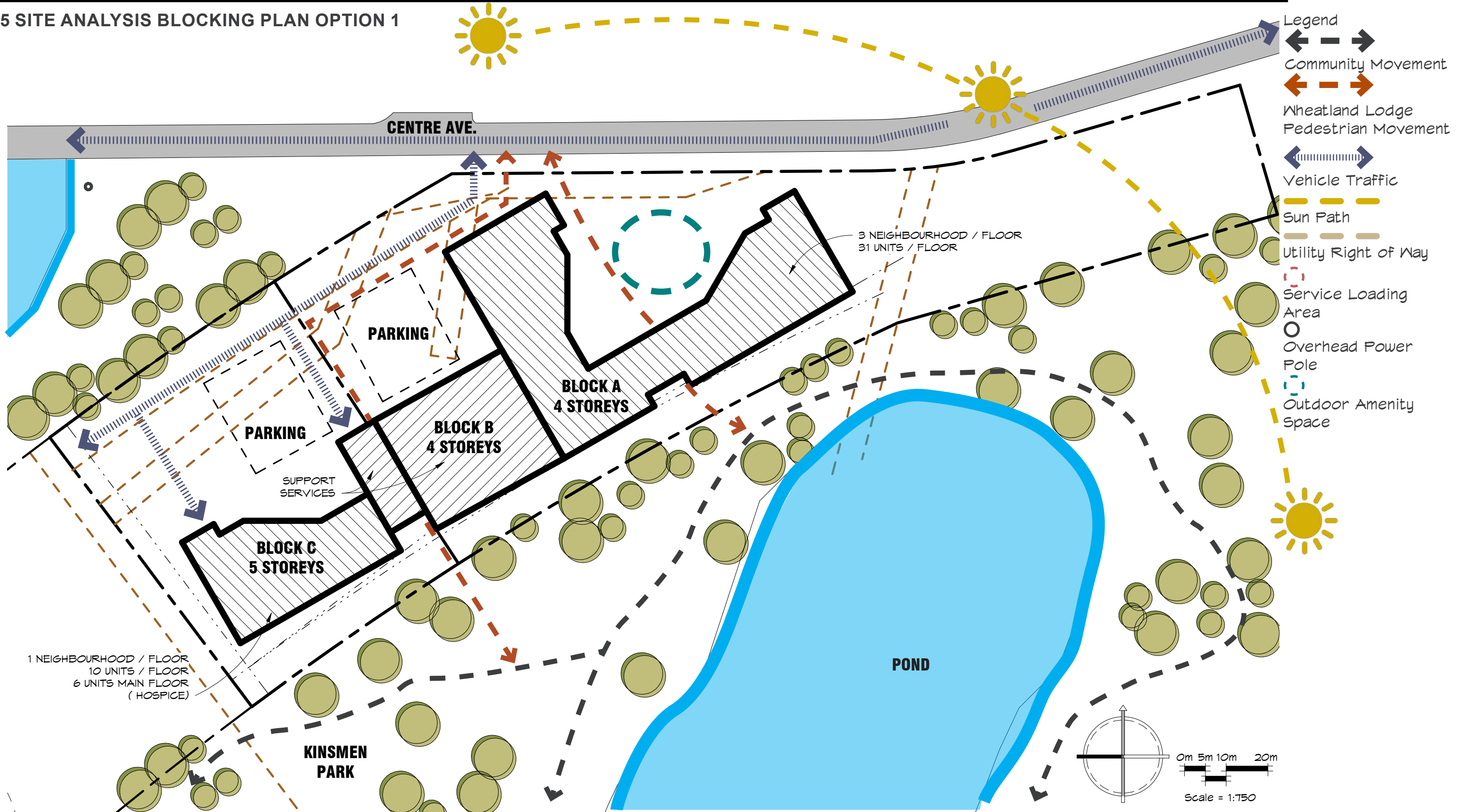
# 3.0 SITE ANALYSIS

## 3.4 SITE CONTEXT



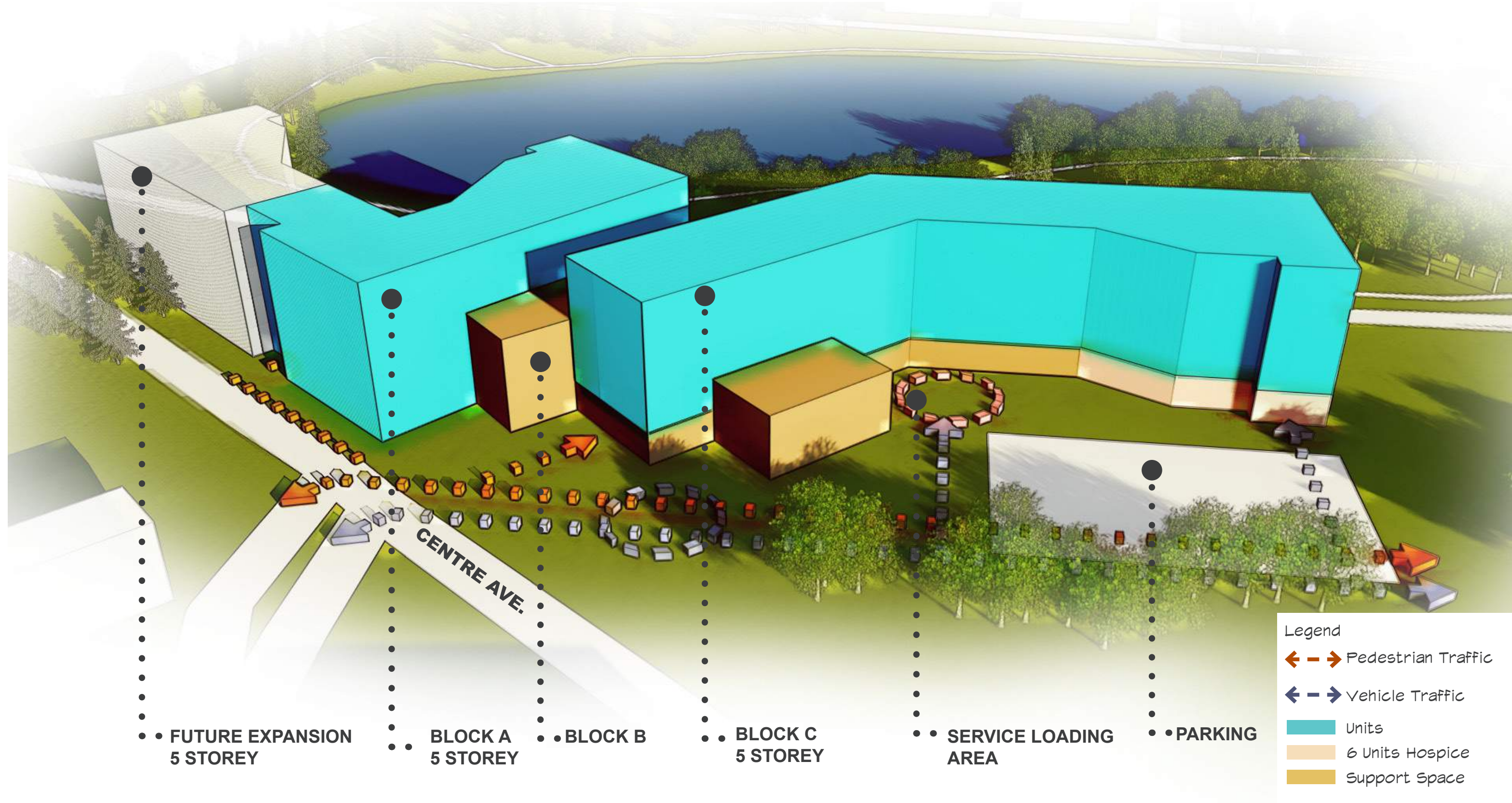
# 3.0 SITE ANALYSIS

## 3.5 SITE ANALYSIS BLOCKING PLAN OPTION 1



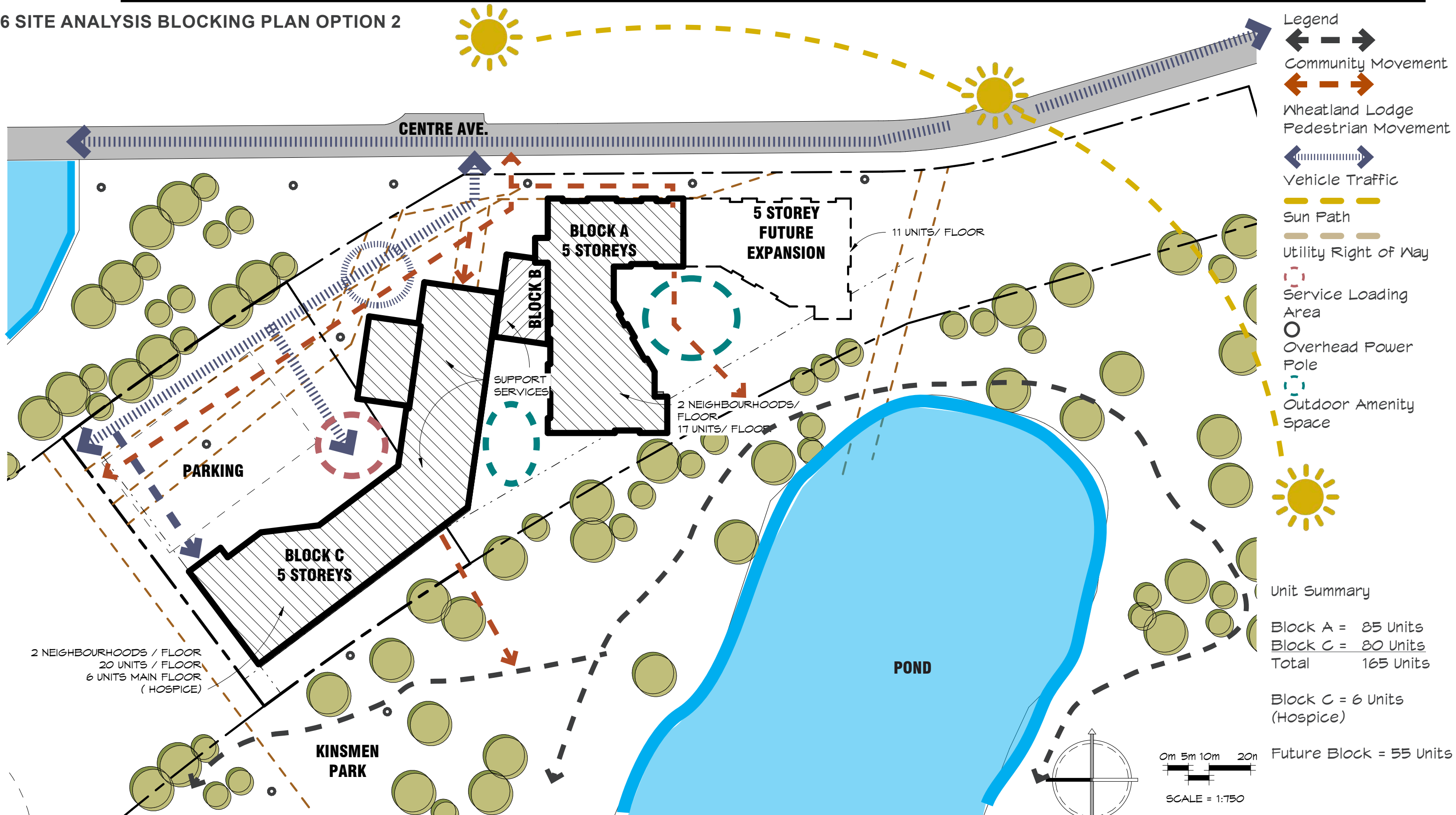
# 3.0 SITE ANALYSIS

## 3.5.1 SITE 3D MASSING OPTION 1



# 3.0 SITE ANALYSIS

## 3.6 SITE ANALYSIS BLOCKING PLAN OPTION 2



# 3.0 SITE ANALYSIS

## 3.6.1 SITE 3D MASSING OPTION 2

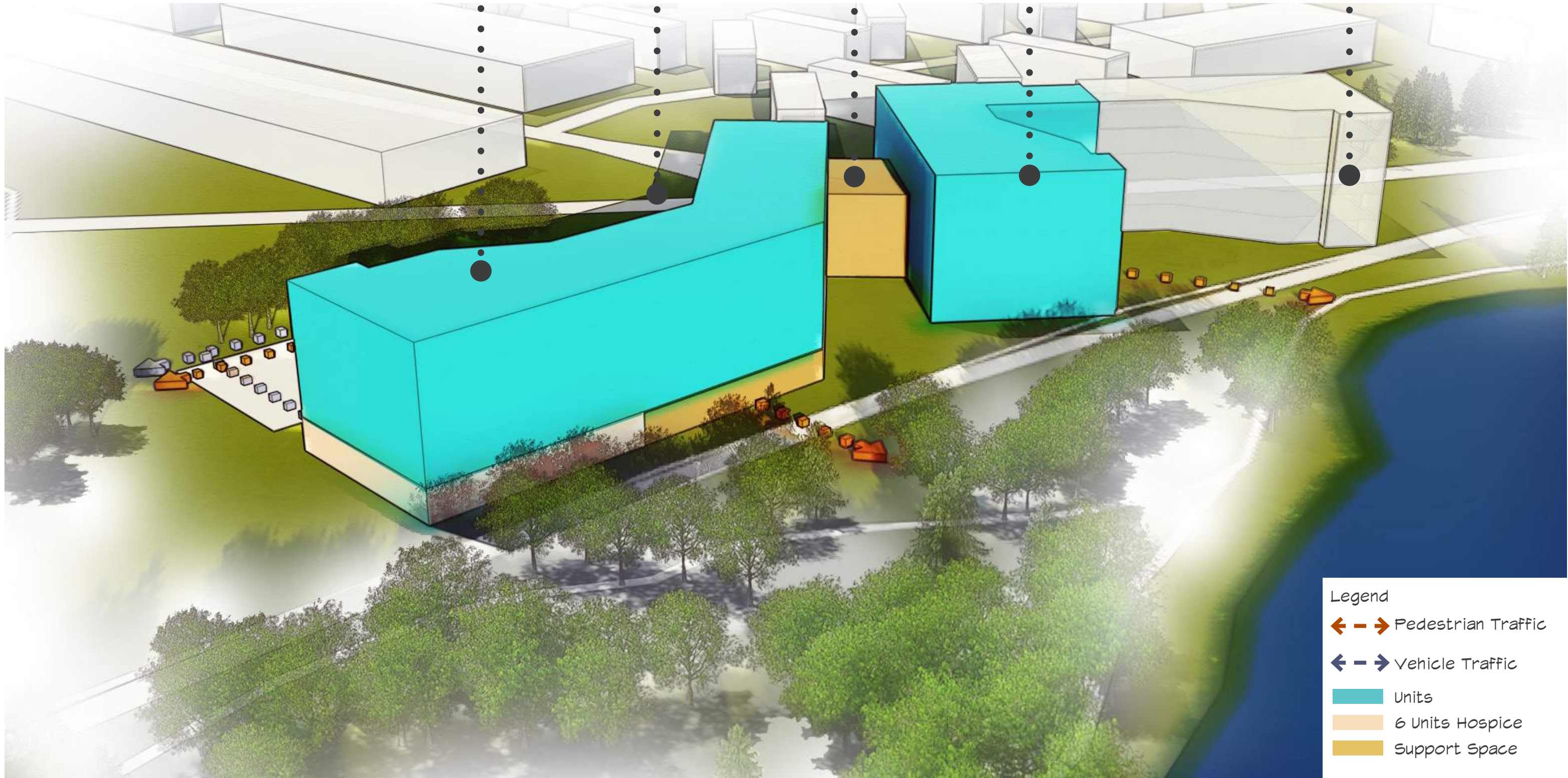
BLOCK C  
5 STOREY

CENTRE  
AVE.

BLOCK B

BLOCK A  
5 STOREY

FUTURE EXPANSION  
5 STOREY

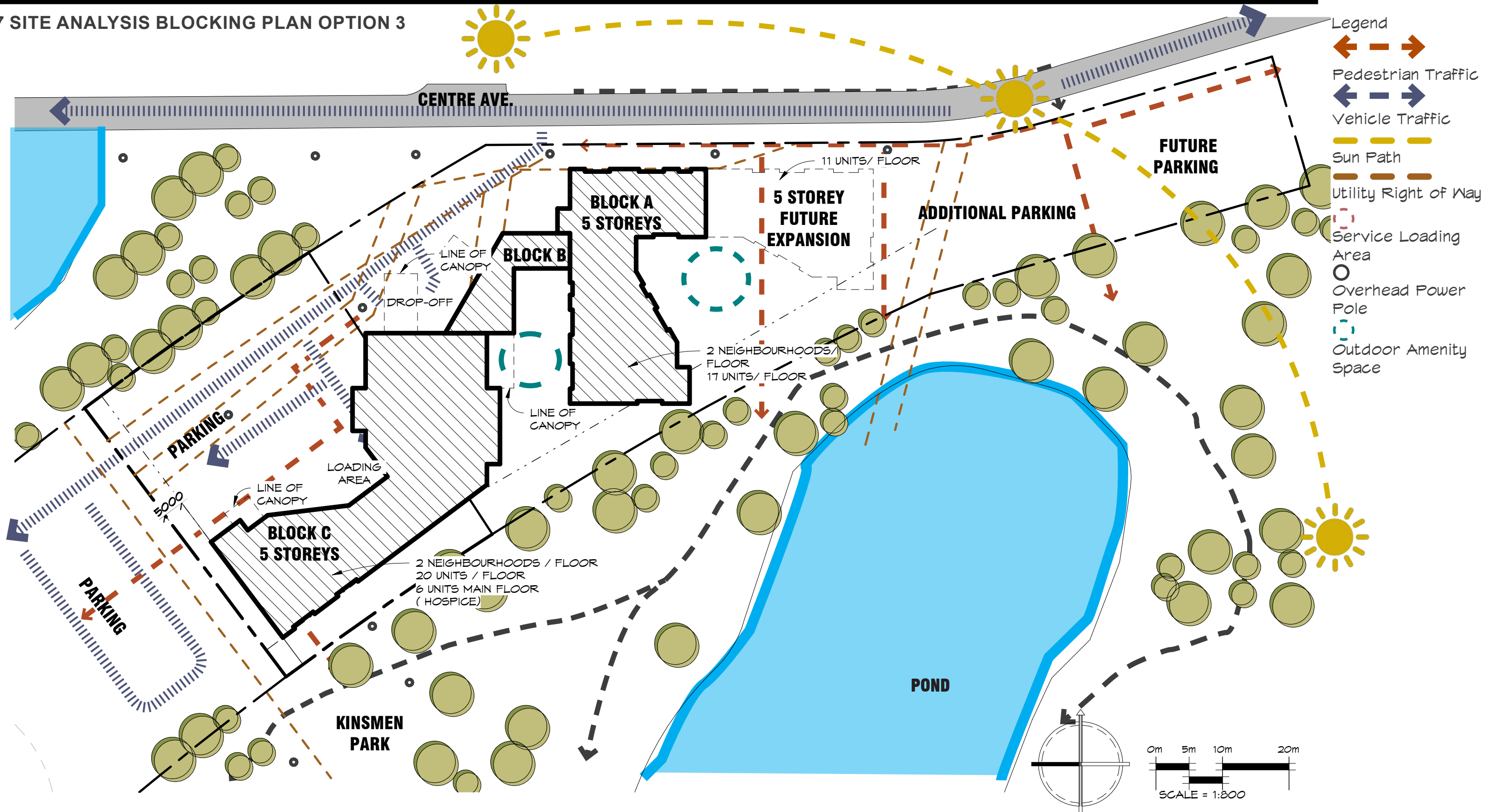


Legend

- ← - → Pedestrian Traffic
- ← - → Vehicle Traffic
- Units
- 6 Units Hospice
- Support Space

# 3.0 SITE ANALYSIS

## 3.7 SITE ANALYSIS BLOCKING PLAN OPTION 3





# 3.0 SITE ANALYSIS

## 3.7.1 SITE 3D MASSING OPTION 3

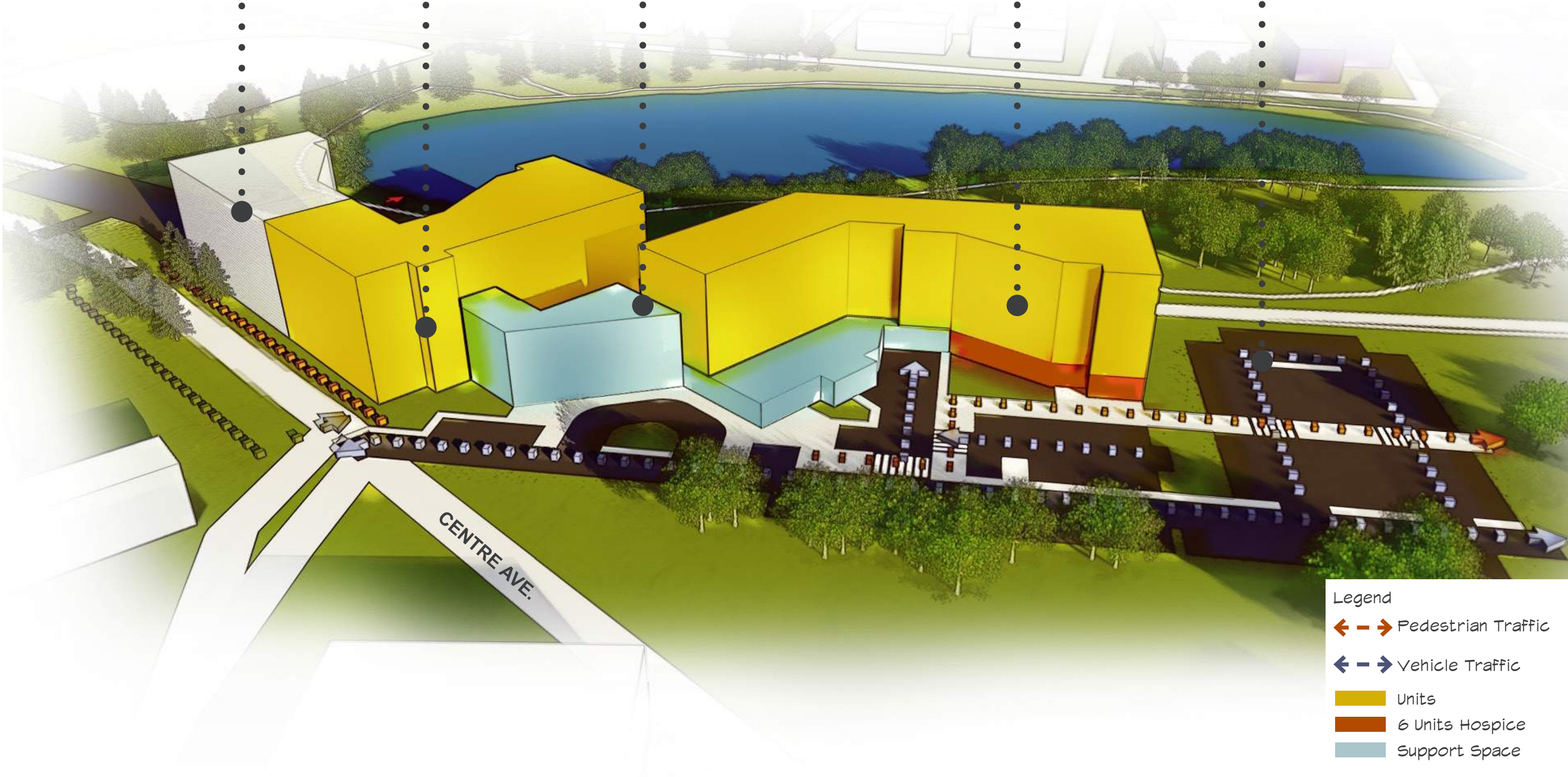
FUTURE EXPANSION  
5 STOREY

BLOCK A  
5 STOREY

BLOCK B

BLOCK C  
5 STOREY

PARKING



Legend

← - - - → Pedestrian Traffic

← - - - → Vehicle Traffic

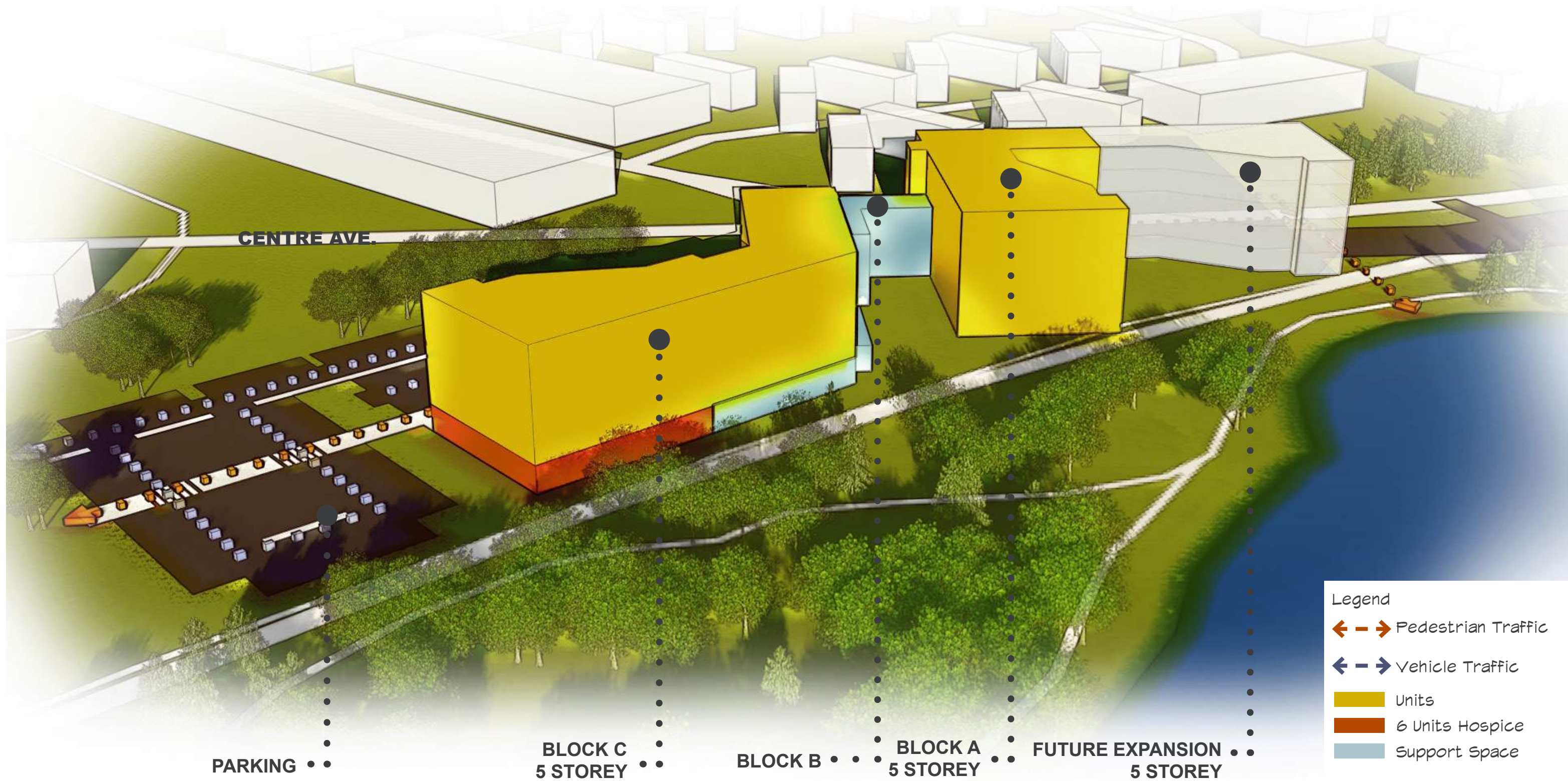
Units

6 Units Hospice

Support Space

# 3.0 SITE ANALYSIS

## 3.7.2 SITE 3D MASSING OPTION 3

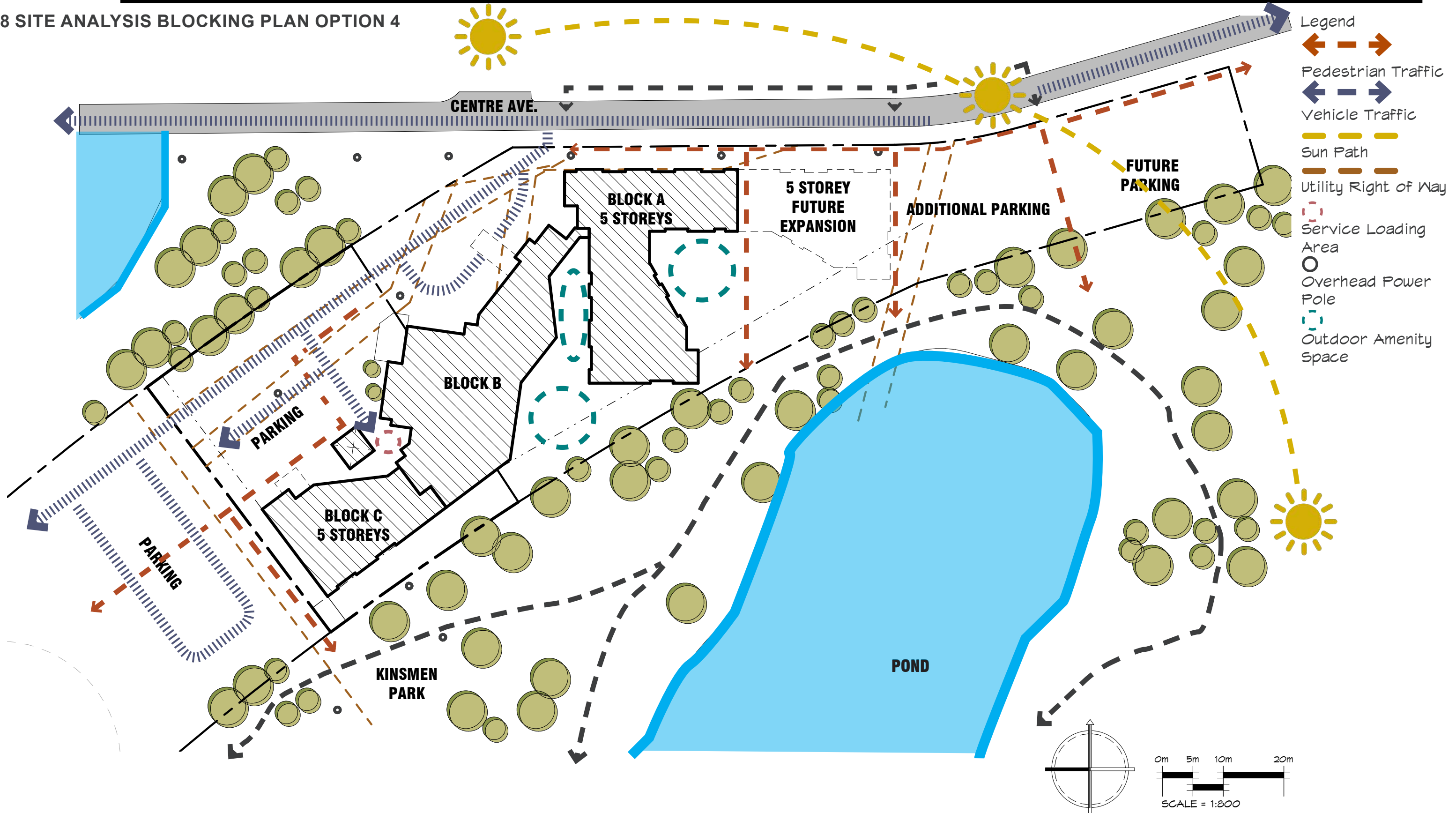


Legend

- ← - → Pedestrian Traffic
- ← - → Vehicle Traffic
- Units
- 6 Units Hospice
- Support Space

# 3.0 SITE ANALYSIS

## 3.8 SITE ANALYSIS BLOCKING PLAN OPTION 4



# 3.0 SITE ANALYSIS

## 3.8.1 SITE 3D MASSING OPTION 4

FUTURE EXPANSION  
5 STOREY

BLOCK A  
5 STOREY

BLOCK B

BLOCK C  
5 STOREY

PARKING



Legend

← - → Pedestrian Traffic

← - → Vehicle Traffic

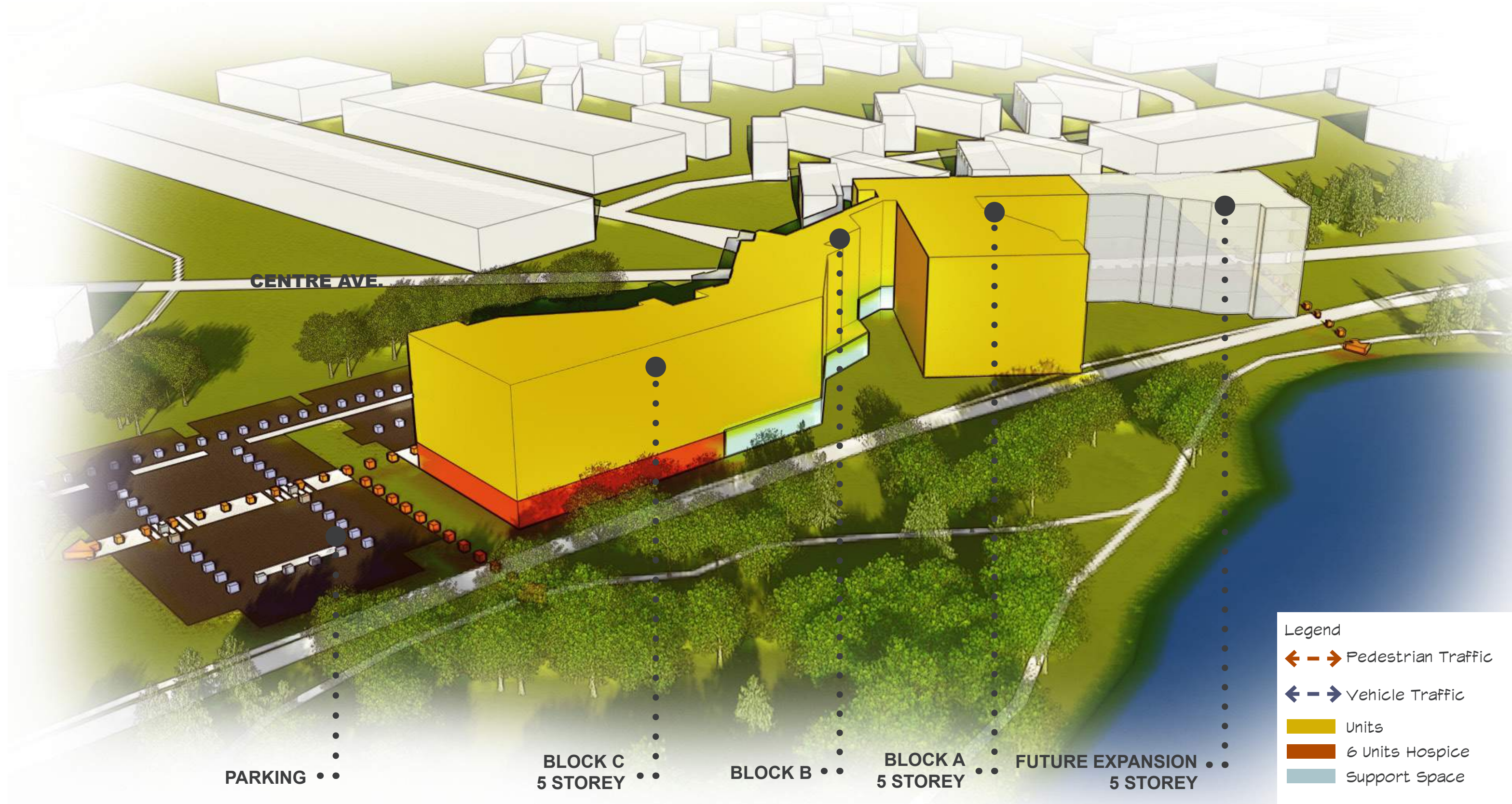
Units

6 Units Hospice

Support Space

# 3.0 SITE ANALYSIS

## 3.8.2 SITE 3D MASSING OPTION 4



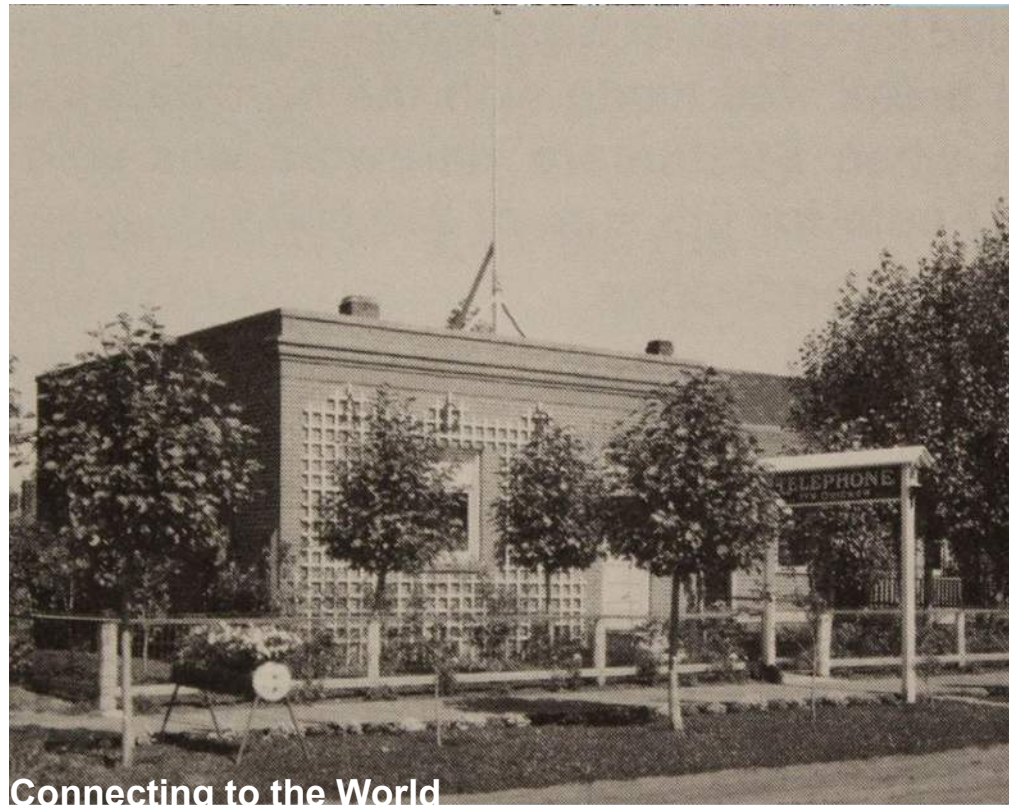
## 4.0 Architectural Design



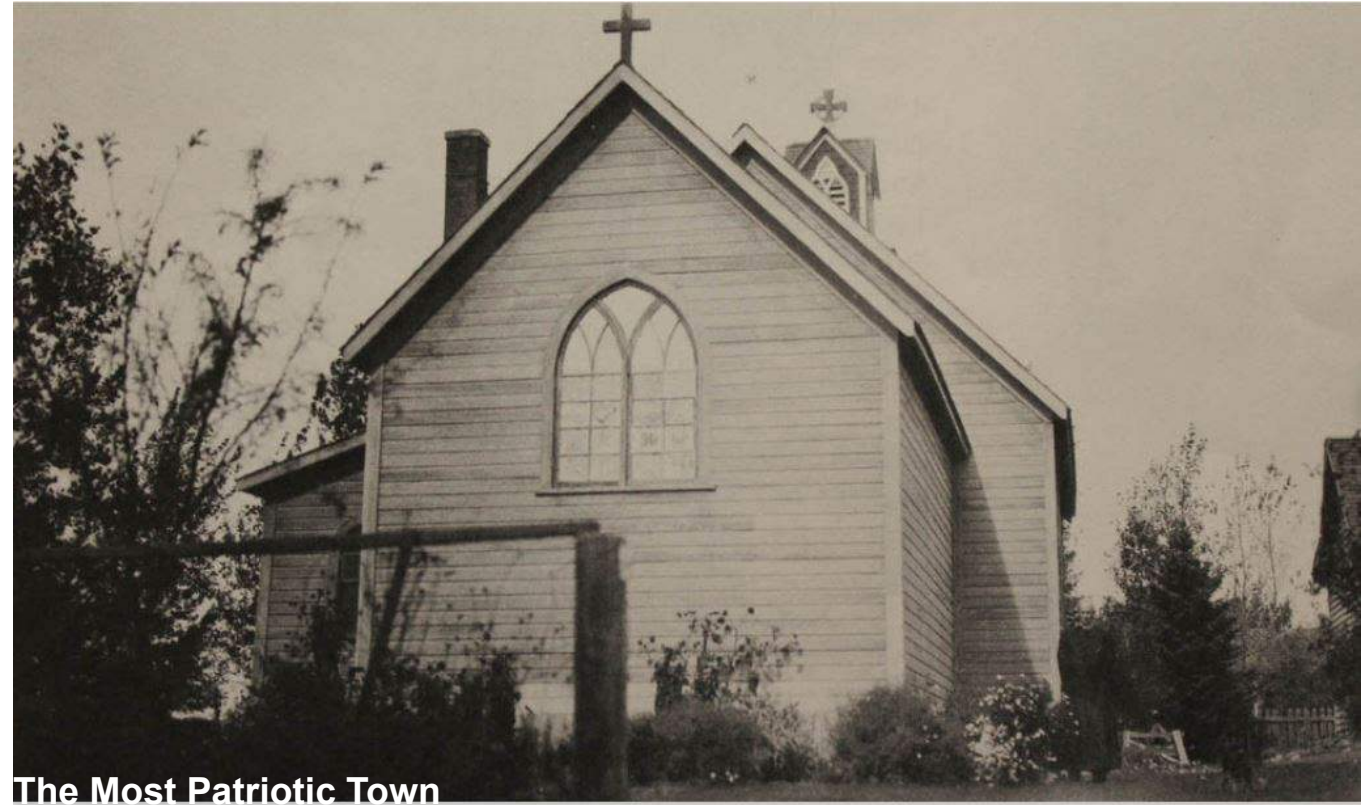
# 4.0 ARCHITECTURAL DESIGN



The Humble Beginning



Connecting to the World



The Most Patriotic Town



Railway



Prairie Landmarks



Strathmore Municipal Building

# 4.0 ARCHITECTURAL DESIGN

## 4.1 FUNCTIONAL PROGRAM

FUNCTIONAL PROGRAM					
WHEATLAND LODGE AND HOSPICE CARE FACILITY					
STRATHMORE, AB					
REF. #	ROOM TYPE	QTY	PROPOSED AREA (SF)	TOTAL PROPOSED AREA (SF)	COMMENTS
<b>PERSONAL SPACES</b>					
A.1	LODGE				
A.1.A	LEVEL 2 - SINGLE SUITES	95	415	39425	
A.1.B	LEVEL 2 - DOUBLE SUITES	20	600	12000	
A.1.C	LEVEL 4 - DSL SUITES	30	415	12450	
A.1.D	LEVEL 4D - DSL SUITES	20	415	8300	
A.2	HOSPICE				
A.2.A	HOSPICE CARE SUITES	6	415	2490	
<b>TOTALS</b>				<b>74665</b>	
<b>ADMINISTRATION, FACILITY, STAFF USE SPACES</b>					
B.1	BOARD ROOM	1	500	500	
B.2	MANAGER'S OFFICE	1	150	150	
B.3	STAFF OFFICES	4	120	480	
B.4	SOCIAL HOUSING OFFICE	1	120	120	
B.5	MAINTENANCE SUPERVISORS STORAGE	1	100	100	
B.6	COPY ROOM	1	120	120	
B.7	WAIT AREA	1	150	150	
B.8	MAIL / FILE ROOM	1	80	80	
<b>TOTALS</b>				<b>1700</b>	
<b>STAFF AREAS</b>					
B.8	STAFF TRAINING / MEETING ROOM	1	1100	1100	
B.9	LOCKER ROOM	1	150	150	
B.10	ACTIVITY COORDINATOR OFFICE	1	150	150	
<b>TOTALS</b>				<b>1400</b>	
<b>NURSING STAFF</b>					
B.11	MEDICAL STORAGE	3	120	360	
B.12	NURSE STATIONS	3	80	240	
<b>TOTALS</b>				<b>600</b>	
<b>FACILITY SUPPORT</b>					
B.13	FACILITY LAUNDRY	1	450	450	
B.14	SOILED LAUNDRY	3	20	60	
B.15	RESIDENT LAUNDRY	3	100	300	
B.16	JANITOR MAIN	1	100	100	
B.17	JANITOR SMALL	5	50	250	
B.18	RECYCLING PROCESSING ROOM	1	600	600	
B.19	RECYCLING WASTE HOLDING ROOM	2	70	140	
B.20	STAFF WASHROOM	1	80	80	
B.21	SCOOTER STORAGE / CHARGE	1	340	340	
B.22	RESIDENT STORAGE SPACES	1	2000	2000	
B.23	LOBBY AREA / RECEPTION	1	500	500	
B.24	VESTIBULE	1	100	100	
B.25	MOVE IN / MUD ROOM	1	450	450	
<b>TOTALS</b>				<b>5370</b>	
<b>DINING SUPPORT SPACES</b>					
B.26	KITCHEN PRODUCTION AREAS	1			
B.26.A	KITCHEN PREP	1	625	625	
B.26.B	KITCHEN RECEIVING / BREAKDOWN	1	130	130	
B.26.C	KITCHEN DISHWASHING / CART HOLDING	1	350	350	
B.26.D	KITCHEN FREEZERS	2	100	200	
B.26.E	KITCHEN COOLERS	2	130	260	
B.26.F	KITCHEN HOUSKEEPING	1	65	65	
B.26.G	KITCHEN CLEANING / CHEM. STORAGE	1	65	65	
B.26.H	KITCHEN - WASHROOM	1	65	65	
B.26.I	KITCHEN DRY STORAGE	1	200	200	
B.26.J	KITCHEN DRY NON-FOOD STORAGE	1	65	65	
B.27	FOOD SERVICE MANAGER OFFICE	1	95	95	
B.28	MEALS ON WHEELS	1	120	120	
B.29	SERVERY W/ INTEGRAL BUFFET	1	250	250	
B.30	CHAIR / TABLE STORAGE	1	300	300	
<b>TOTALS</b>				<b>2790</b>	

FACILITY SUPPORT (BOH)					
B.31	ELEVATOR	2	107	214	
B.32	RESIDENT ELEVATOR	3	107	321	
B.33	MECHANICAL ROOM	1	2000	2000	
B.34	ELECTRICAL ROOM	1	150	150	
B.35	SERVER ROOM	2	10	20	
B.36	STAIRS	3	258	774	
B.37	WORKSHOP	1	1100	1100	
B.38	I.T. MAINTENANCE	1	40	40	
B.39	LOADING DOCK	1	400	400	
<b>TOTALS</b>				<b>5019</b>	
<b>DINING, SERVERY, &amp; COMMON AMENITIES</b>					
C.1	WASHROOMS	5	100	500	
C.2	STORAGE	1	90	90	
C.3	STORAGE	3	200	600	
C.4	COMMON DINING HALL	1	2400	2400	
C.5	MAIN DINING SERVERY	1	500	500	
C.6	BISTRO LOUNGE	1	600	600	
C.7	ASSISTED BATH ROOM	3	315	945	
C.8	CAFÉ / PUB / DANCE	1	800	800	
C.9	YOGA & FITNESS	1	300	300	
C.10	SEWING & CRAFT	1	300	300	
C.11	ART	1	300	300	
C.12	LIBRARY	1	600	600	
C.13	LIVING AREAS	2	600	1200	
C.14	CASUAL SEATING	3	460	1380	
C.15	HAIR SALON	1	250	250	
C.16	TUCK SHOP	1	120	120	
C.17	MAIL	1	50	50	
C.18	INDOOR GARDENING	1	600	600	
C.19	CHAPEL / SPIRITUAL ROOM	1	500	500	
C.20	FAMILY DINING	1	250	250	
<b>TOTALS</b>				<b>12285</b>	
<b>FACILITY TOTALS</b>					
<b>TOTAL FLOOR AREA</b>					
<b>25% CIRCULATION FACTOR AVERAGE</b>					
<b>TOTAL GROSS FLOOR AREA</b>					



# 4.0 ARCHITECTURAL DESIGN

## 4.2 BUILDING CODE REVIEW: ALBERTA BUILDING CODE 2019 EDITION

### 4.2.1 BUILDING CLASSIFICATION AND GENERAL CONSTRUCTION REQUIREMENTS

#### BUILDING CLASSIFICATION: SENIOR LODGE

<b>Building Classification:</b>	3.2.2.42 Group B, Division 3
<b>Building Height:</b>	Any Height
<b>Building Access:</b>	N/A
<b>Building Area:</b>	Any Area
<b>Type of Construction:</b>	Non-combustible
<b>Sprinklers Required:</b>	Yes
<b>Floor Assemblies</b>	2 Hours
<b>Mezzanines</b>	1 Hours
<b>Roof Assemblies</b>	No F.R.R
<b>Loadbearing Walls/etc.</b>	2 Hours
<b>Occupancy Load</b> (3.1.17.1)	171 Residents 60 Staff

### 3.2.2 COMPONENT FIRE SEPARATION REQUIREMENTS

ROOMS + SPACES	FIRE RESISTANCE RATING OF FIRE SEPARATION
<b>Exits</b> 3.4.1.2 / 3.4.4.1	2 Hours
<b>Janitor Rooms</b> 3.3.1.21	Rating waived in a sprinklered building
<b>Service Rooms</b> 3.6.2.1	1 h
<b>Public Corridors</b> 3.3.1.4	45 min in a sprinklered building
<b>Assembly Occupancy</b> 3.3.2.6	Rating waived in a sprinklered building
<b>Vertical Service Shafts</b> 3.6.3.1	1 Hours
<b>Exit Stairs</b> 3.4.4.1	45 min
<b>Elevator Shafts</b> 3.5.3.1	2 Hours
<b>Elevator Machine Rooms</b> 3.5.3.1	45 min

# 4.0 ARCHITECTURAL DESIGN

## EXIT REQUIREMENTS

### Minimum No. Required 3.3.1.3 / 3.4.2.1

- 1) Access to exit within floor areas shall conform to Subsections 3.3.2. to 3.3.5., in addition to the requirements of this Subsection.
- 6) At least two separate means of egress at the roof level, designed in conformance with the requirements for exits in Section 3.4., shall be provided from a roof used or intended for an occupant load more than 60.
- 10) Two points of egress shall be provided for a service space referred to in Sentence 3.2.1.1.(8) if
  - a) the area is more than 200 sq.m. or
  - b) the travel distance measured from any point in the service space to a point of egress is more than 25 m.

### Corridors 3.3.1.9

- 1) The minimum width of a public corridor shall be 1 100 mm.
- 2) Except as required by Sentence 3.3.3.3.(3), the minimum unobstructed width of a corridor used by the public or a corridor serving classrooms or patients' sleeping rooms shall be 1 100 mm.
- 7) Except for a dead-end corridor that is entirely within a suite or as permitted by Sentences 3.3.3.3.(1) and 3.3.4.4.(6), a dead-end corridor is permitted provided it is not more than 6 m long.

### Travel Distance 3.4.2.5.(1)

- c) 45 m in a floor area that contains an occupancy other than a high-hazard industrial occupancy, provided it is sprinklered throughout.

## OTHER REQUIREMENTS

### Additional Requirements for high buildings 3.2.6.1.(1)(c)

A Building with a B3 occupancy above the 3rd storey must conform to the additional requirements for high buildings in subsections 3.2.6.



# 4.0 ARCHITECTURAL DESIGN

## 4.3 SITE FEATURES

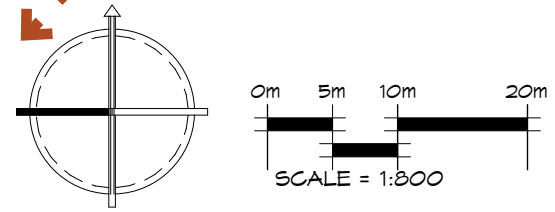
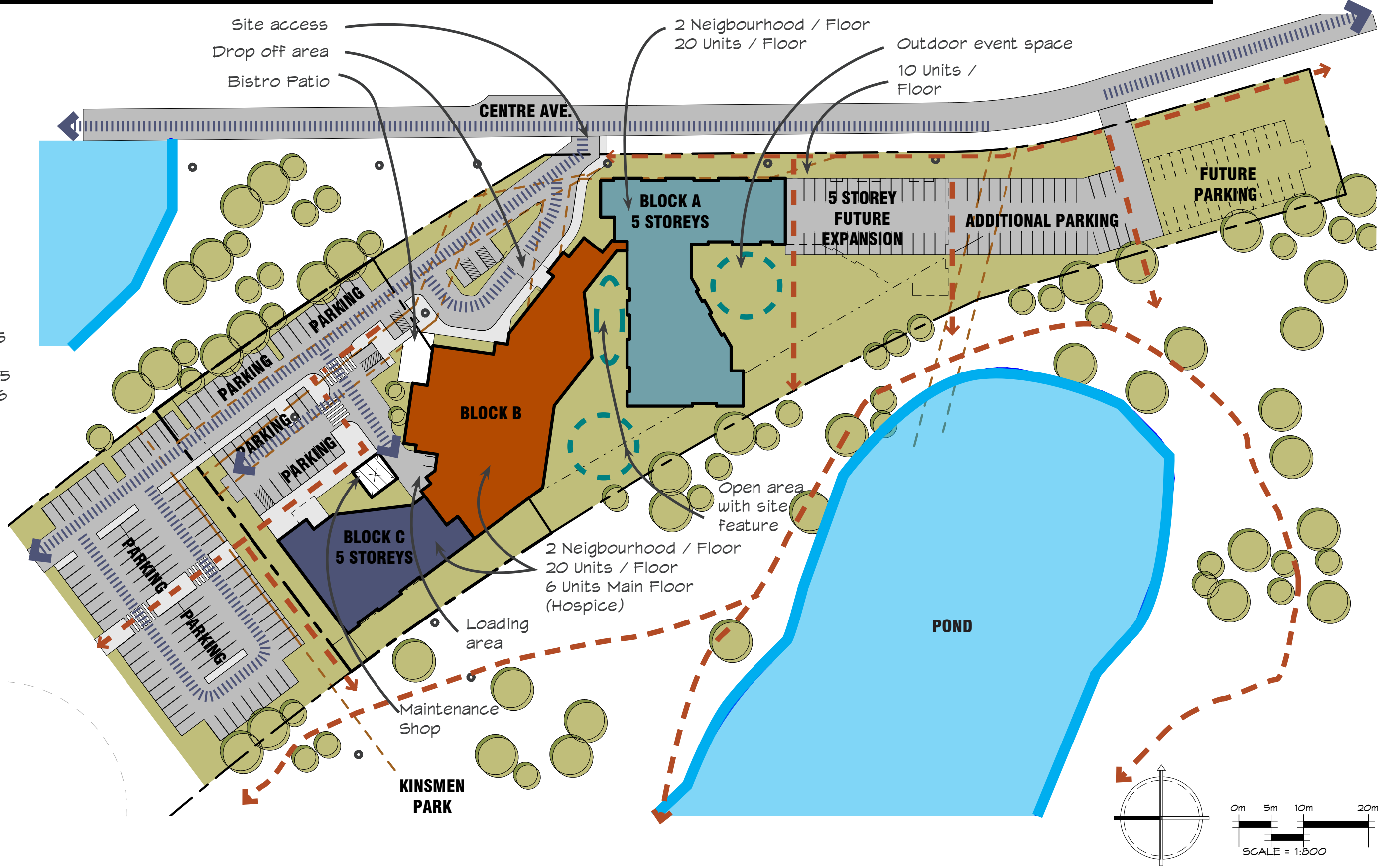


# 4.0 ARCHITECTURAL DESIGN

## 4.4 SITE PLAN

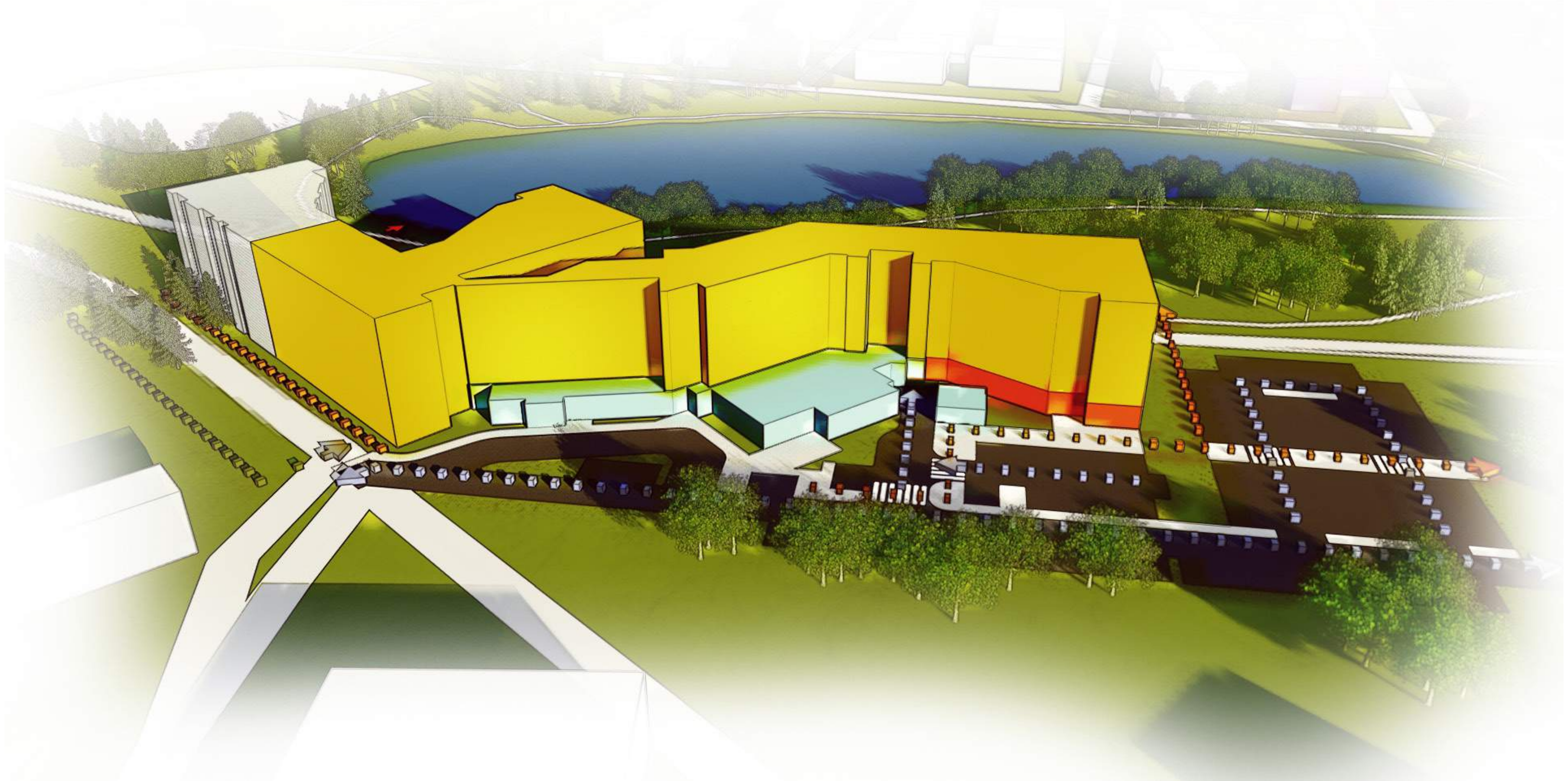
- Legend
- Pedestrian Traffic
  - Vehicle Traffic
  - Utility Right of Way
  - Overhead Power Pole
  - Outdoor Amenity Space

Summary of Units: 165  
 Total Lodge Units: 165  
 Total Hospice Units: 6  
 Future Expansion  
 Additional 50 Units



# 4.0 ARCHITECTURAL DESIGN

## 4.4.1 AERIAL VIEW / MASSING



BIRD'S EYE VIEW FRONT OF THE BUILDING

# 4.0 ARCHITECTURAL DESIGN










## 4.5 OVERALL MAIN FLOOR PLAN

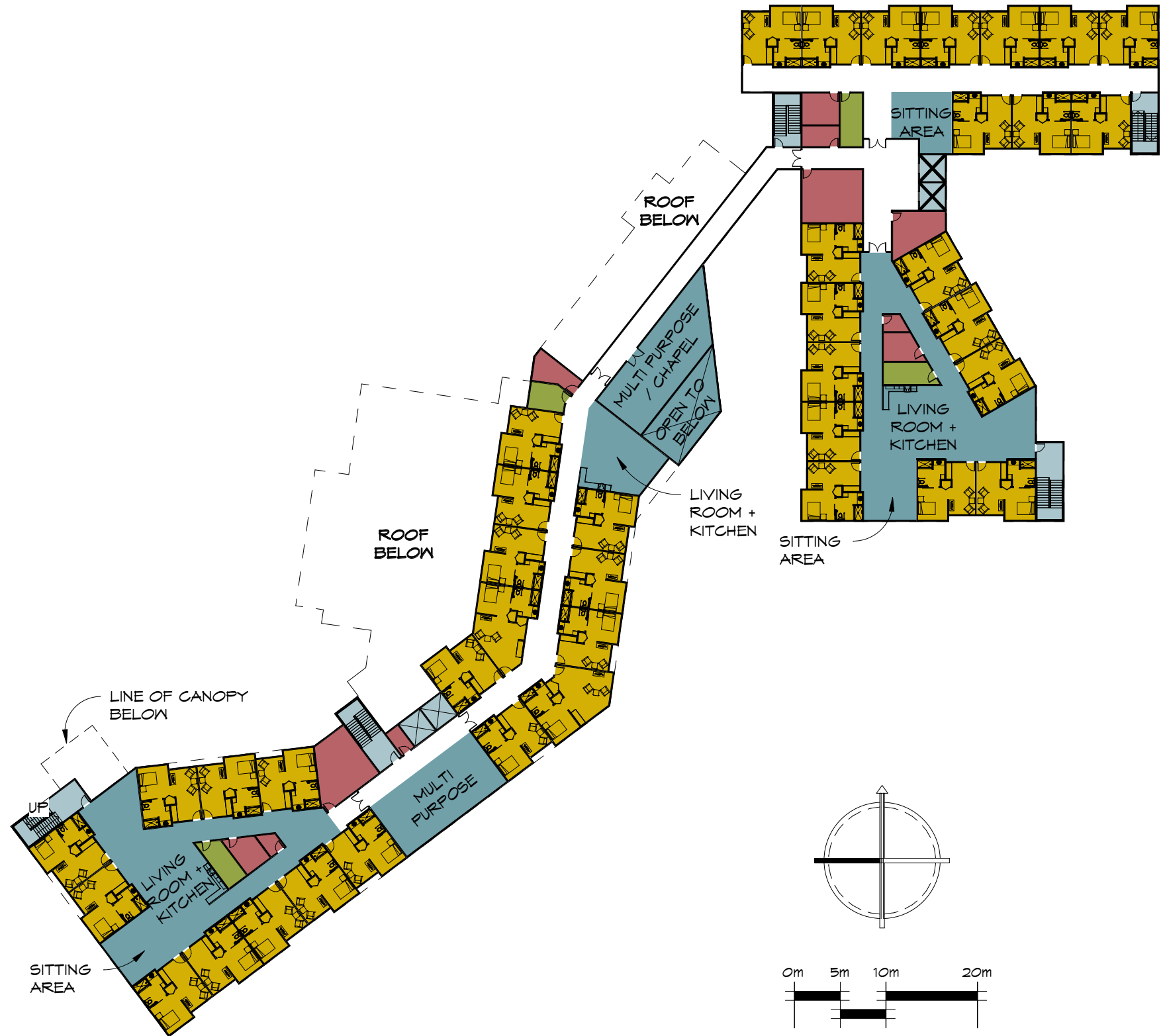


# 4.0 ARCHITECTURAL DESIGN

## 4.6 OVERALL TYPICAL UPPER FLOOR PLAN

### LEGEND

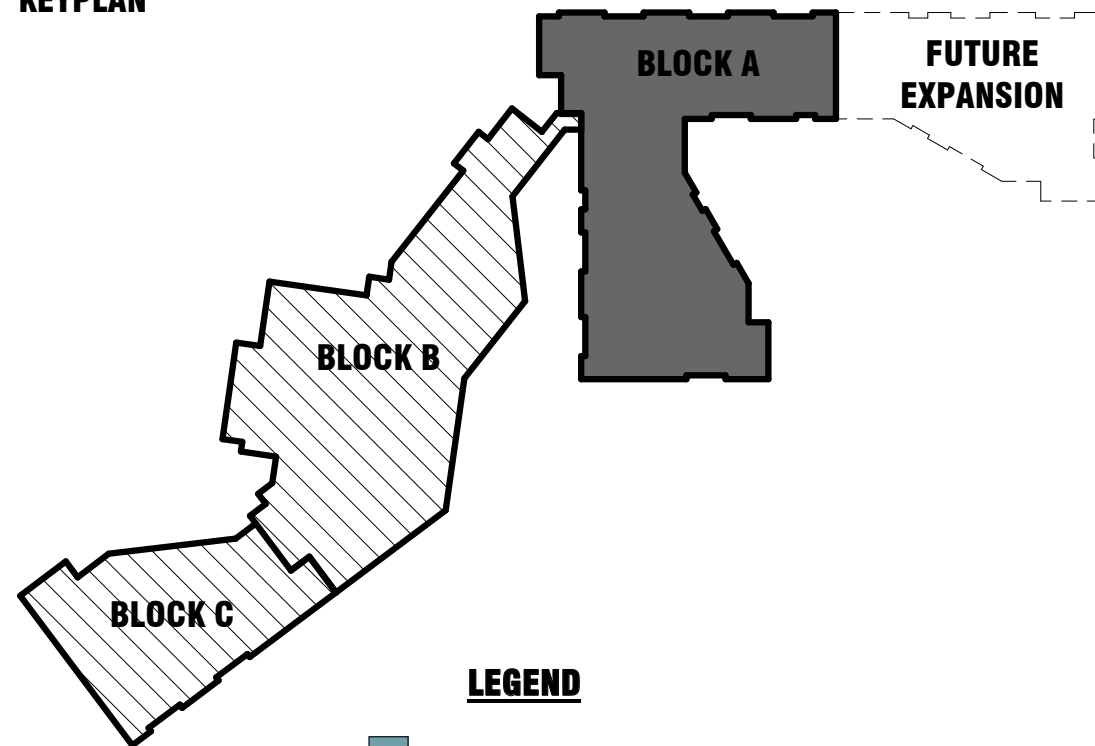
	AMENITY SPACES
	STAFF + ADMIN
	SUPPORT SPACES
	HOSPICE CARE SUPPORT SPACES
	HOSPICE CARE SUITES
	RENTAL SUITES
	LODGE SUITES
	STAIRS + ELEVATORS
	CIRCULATION



# 4.0 ARCHITECTURAL DESIGN

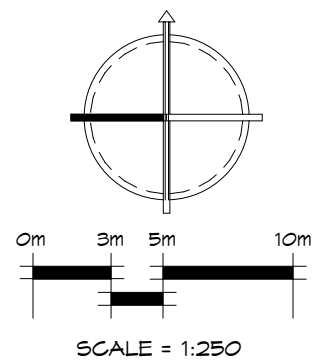
## 4.7 BLOCK A: MAIN FLOOR PLAN

### KEYPLAN



### LEGEND

- AMENITY SPACES
- STAFF + ADMIN
- SUPPORT SPACES
- HOSPICE CARE SUPPORT SPACES
- HOSPICE CARE SUITES
- RENTAL SUITES
- LODGE SUITES
- STAIRS + ELEVATORS
- CIRCULATION

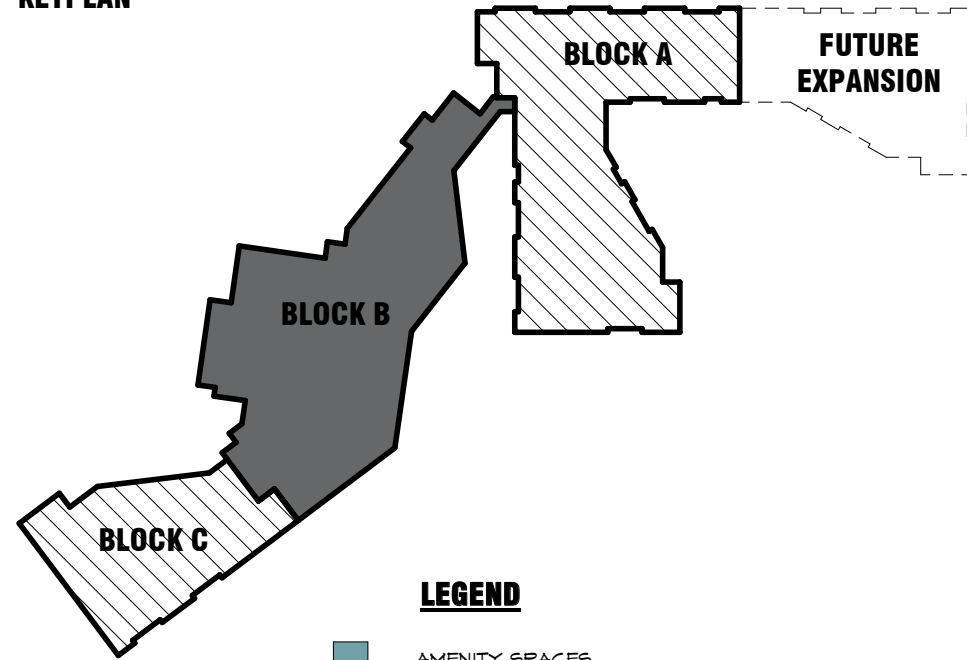




# 4.0 ARCHITECTURAL DESIGN

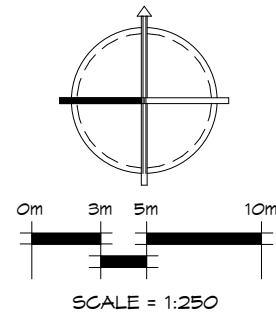
## 4.8 BLOCK B: MAIN FLOOR PLAN

### KEYPLAN



### LEGEND

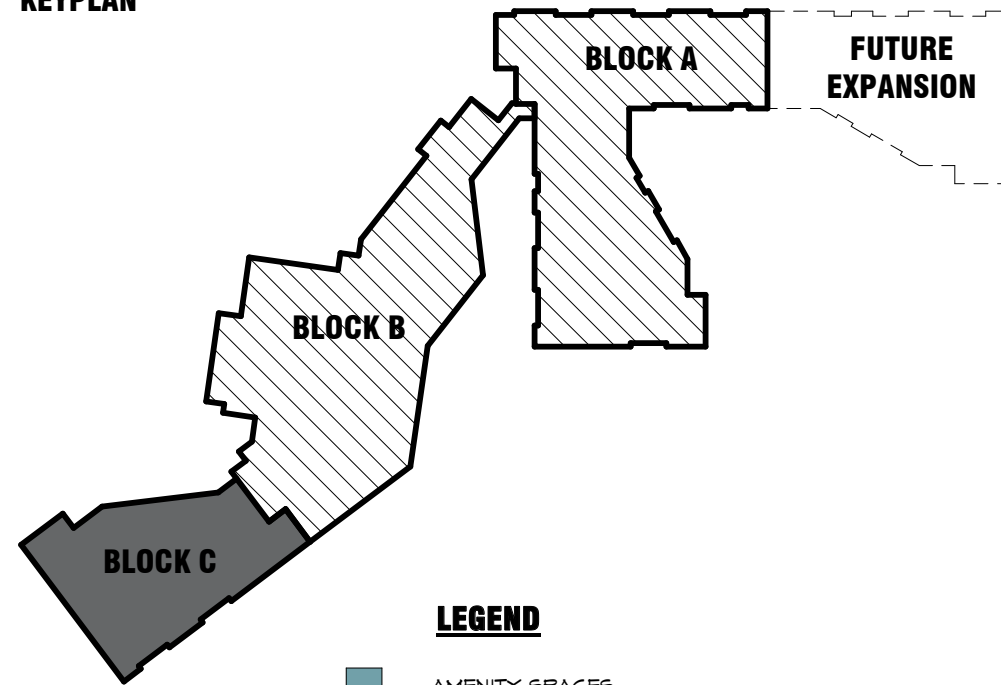
- AMENITY SPACES
- STAFF + ADMIN
- SUPPORT SPACES
- HOSPICE CARE SUPPORT SPACES
- HOSPICE CARE SUITES
- RENTAL SUITES
- LODGE SUITES
- STAIRS + ELEVATORS
- CIRCULATION



# 4.0 ARCHITECTURAL DESIGN

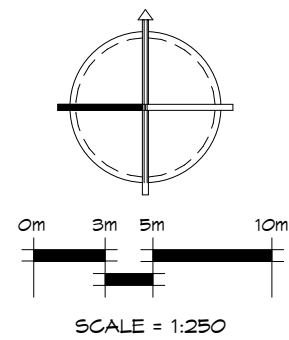
## 4.9 BLOCK C: MAIN FLOOR PLAN

### KEYPLAN



### LEGEND

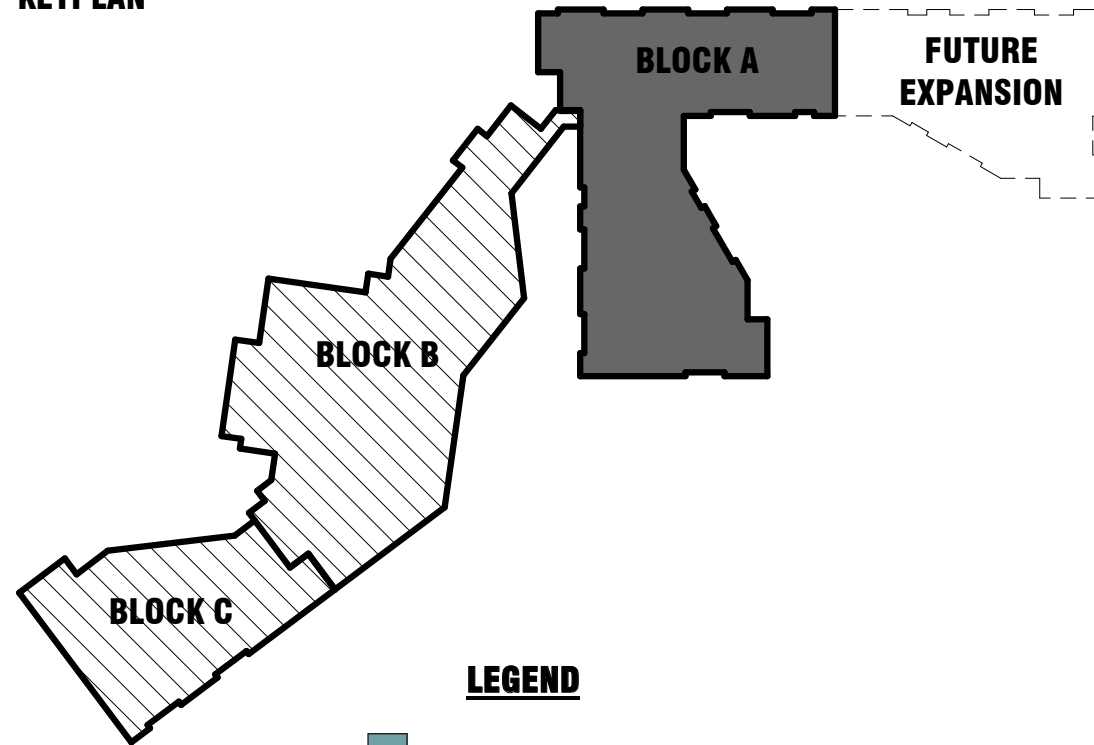
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- STAFF + ADMIN
- SUPPORT SPACES
- HOSPICE CARE SUPPORT SPACES
- HOSPICE CARE SUITES
- RENTAL SUITES
- LODGE SUITES
- STAIRS + ELEVATORS
- CIRCULATION



# 4.0 ARCHITECTURAL DESIGN

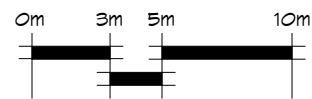
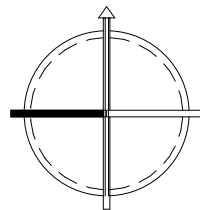
## 4.10 BLOCK A: TYPICAL UPPER FLOOR PLAN

### KEYPLAN

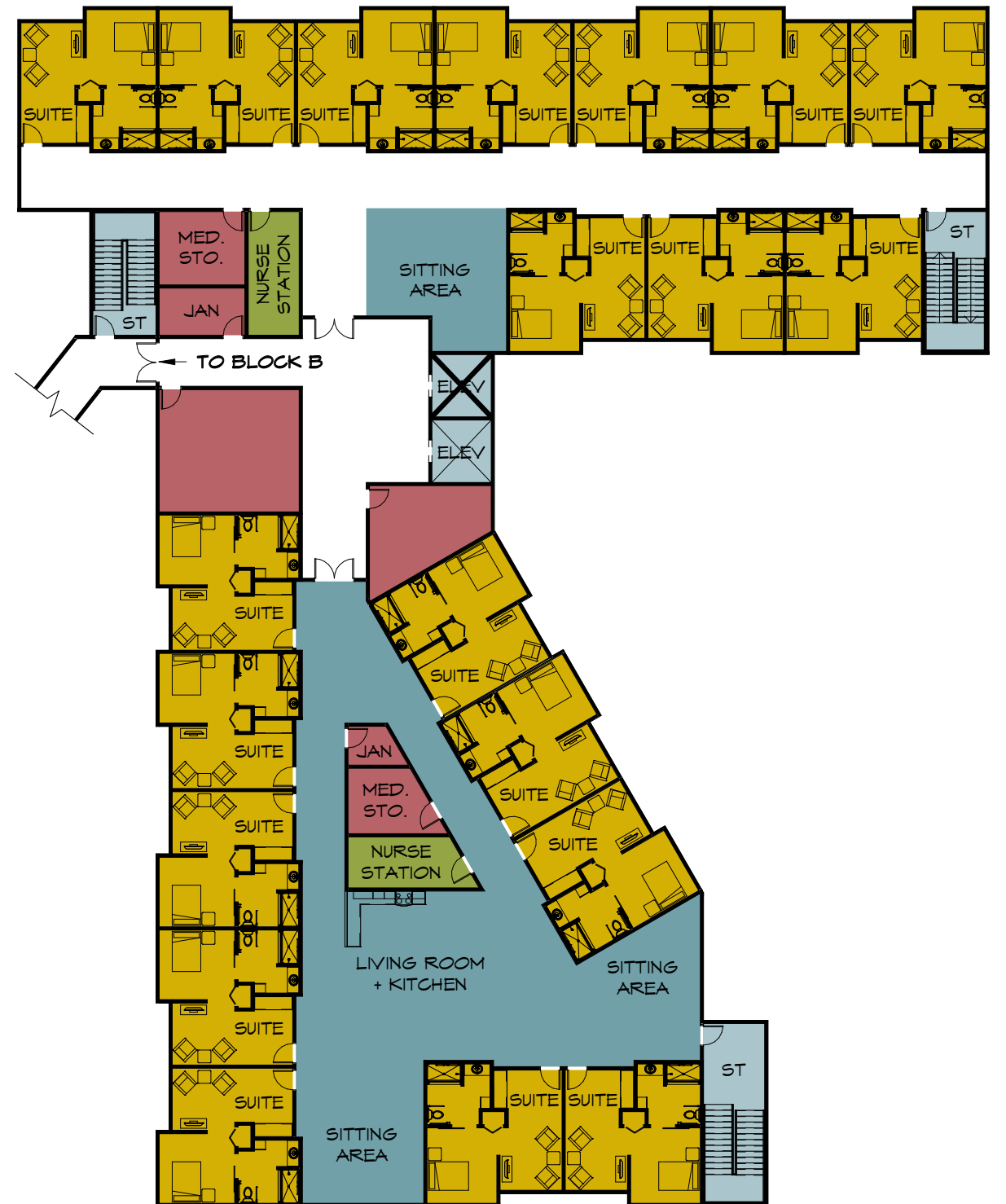


### LEGEND

- AMENITY SPACES
- STAFF + ADMIN
- SUPPORT SPACES
- HOSPICE CARE SUPPORT SPACES
- HOSPICE CARE SUITES
- RENTAL SUITES
- LODGE SUITES
- STAIRS + ELEVATORS
- CIRCULATION



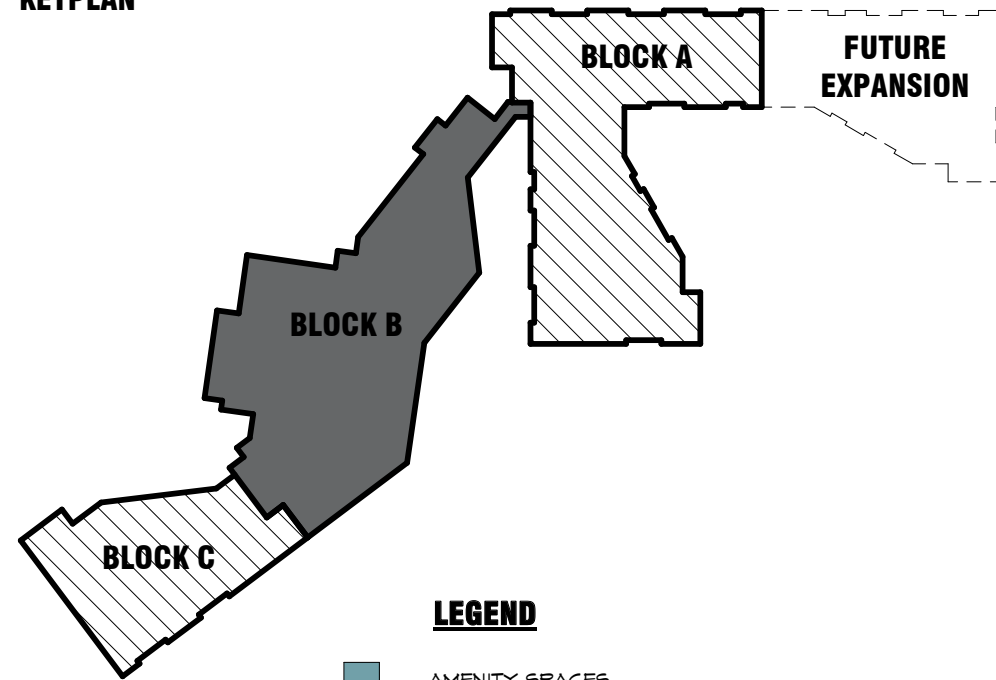
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# 4.0 ARCHITECTURAL DESIGN

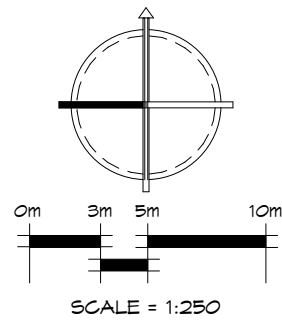
## 4.11 BLOCK B: TYPICAL UPPER FLOOR PLAN

### KEYPLAN



### LEGEND

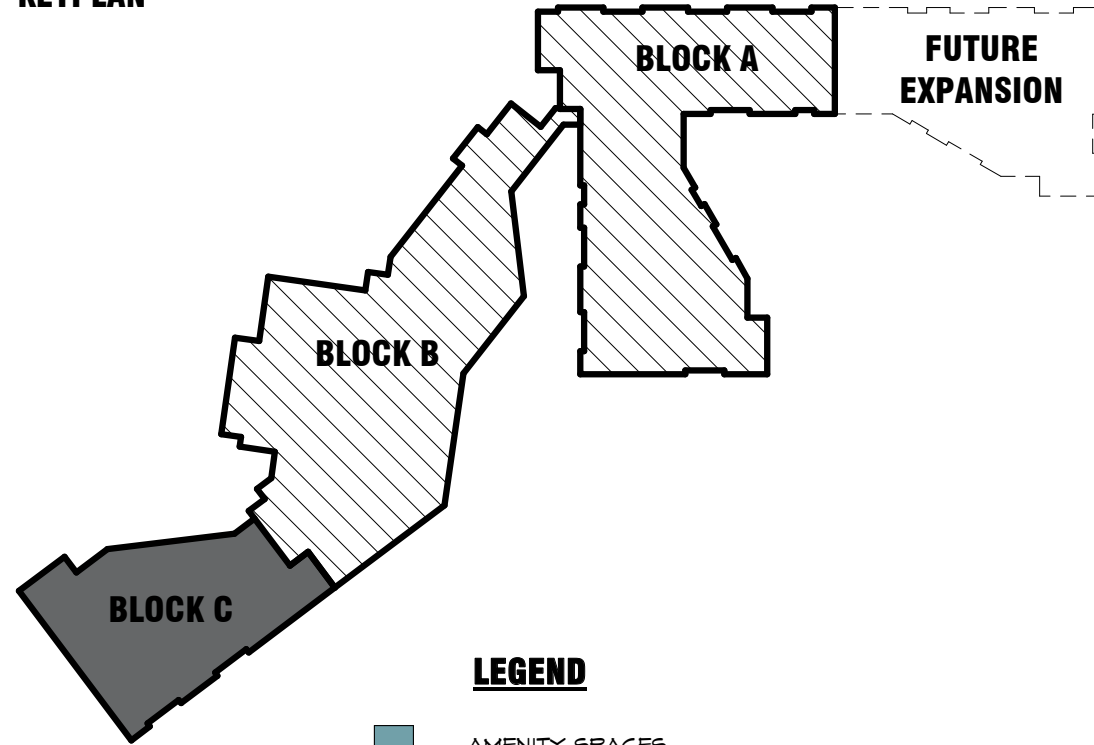
- AMENITY SPACES
- STAFF + ADMIN
- SUPPORT SPACES
- HOSPICE CARE SUPPORT SPACES
- HOSPICE CARE SUITES
- RENTAL SUITES
- LODGE SUITES
- STAIRS + ELEVATORS
- CIRCULATION



# 4.0 ARCHITECTURAL DESIGN

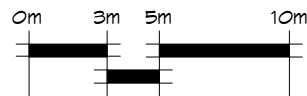
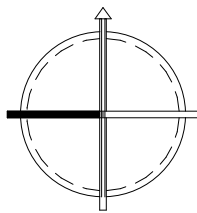
## 4.12 BLOCK C: TYPICAL UPPER FLOOR PLAN

### KEYPLAN



### LEGEND

- AMENITY SPACES
- STAFF + ADMIN
- SUPPORT SPACES
- HOSPICE CARE SUPPORT SPACES
- HOSPICE CARE SUITES
- RENTAL SUITES
- LODGE SUITES
- STAIRS + ELEVATORS
- CIRCULATION



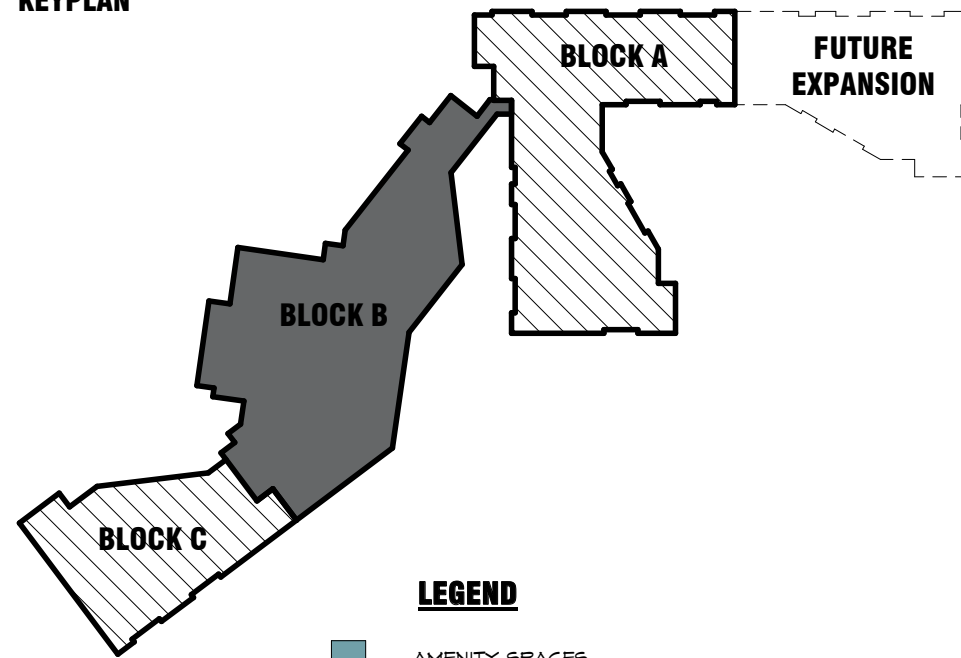
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# 4.0 ARCHITECTURAL DESIGN

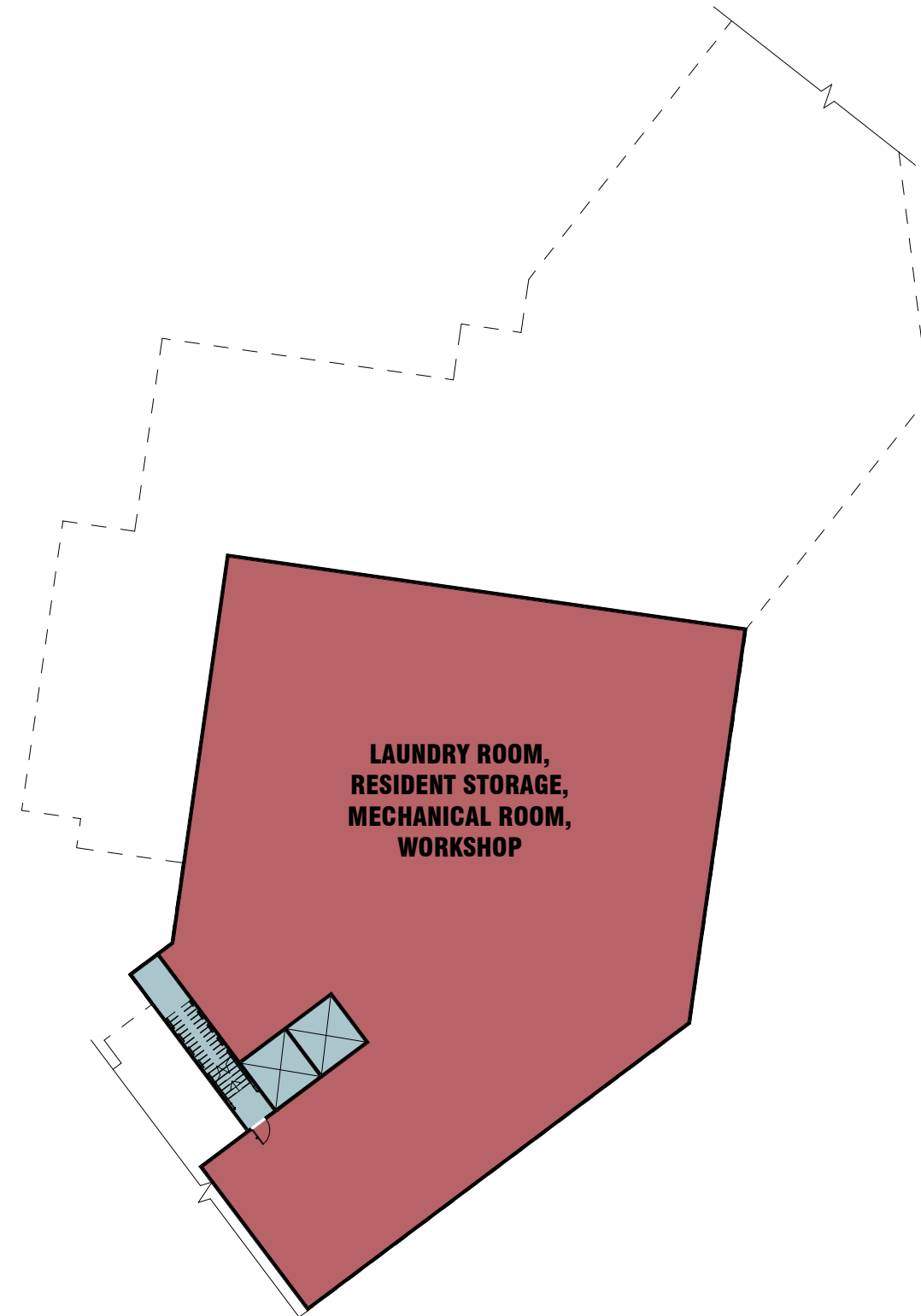
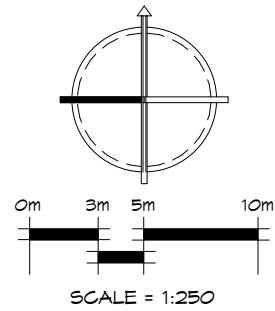
## 4.13 BASEMENT PLAN

### KEYPLAN



### LEGEND

- AMENITY SPACES
- STAFF + ADMIN
- SUPPORT SPACES
- HOSPICE CARE SUPPORT SPACES
- HOSPICE CARE SUITES
- RENTAL SUITES
- LODGE SUITES
- STAIRS + ELEVATORS
- CIRCULATION



# 4.0 ARCHITECTURAL DESIGN

## 4.14 TYPICAL RESIDENT SUITE PLAN



### Resident Suite Example

- Accessible washroom
- Kitchenette
- Private Bedroom
- Patio
- Living + Dining Space
- Storage



# 4.0 ARCHITECTURAL DESIGN

## 4.15 PRELIMINARY EXTERIOR VIEW



ARTISTIC REPRESENTATION ONLY.

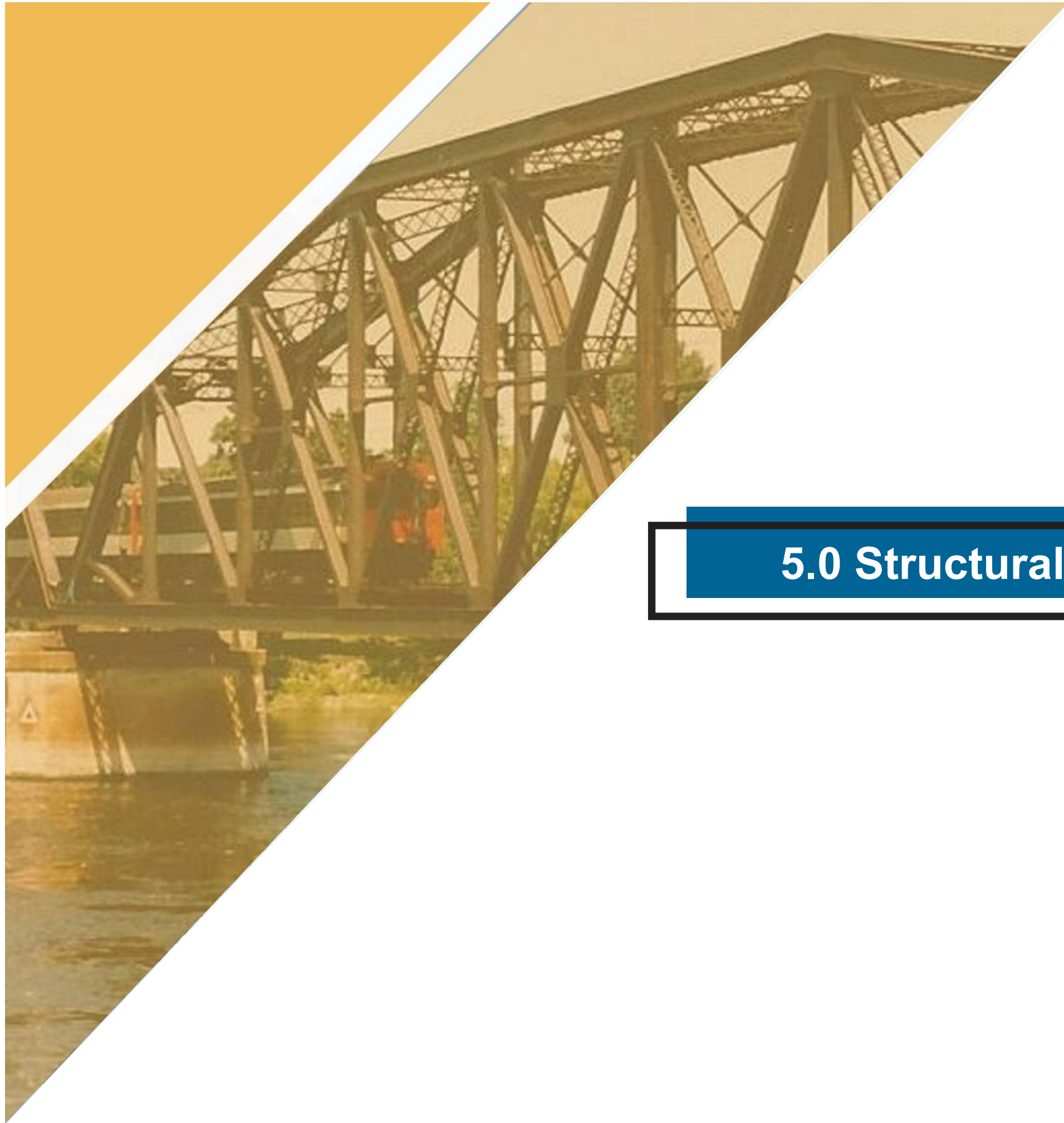


# 4.0 ARCHITECTURAL DESIGN

## 4.15 PRELIMINARY EXTERIOR VIEW



ARTISTIC REPRESENTATION ONLY.



## 5.0 Structural Design

# 5.0 STRUCTURAL DESIGN

## 5.1 PROJECT BACKGROUND

The Wheatland Lodge and Hospice Care Facility in Strathmore is an 18,823m<sup>2</sup> multi-storey structure to be built primarily of timber. There are two five-storey residential wings connected with a three-storey link which consists of common core facilities on the main floor and additional residential suites on the second and third floors. A partial basement is located below the common core facilities.

## 5.2 DESIGN CRITERIA

The structural elements of the new Wheatland Lodge and Hospice Care Facility will be designed in accordance with the requirements of the National Building Code 2019 - Alberta Edition (NBC-AE) and all the reference documents indicated below. The structural systems will have the strength to sustain the minimum loading requirements indicated in the NBC-AE. As indicated in the building code, a “Normal” importance factor will be used.

The building structures will be engineered to the following design codes:

- National Building Code 2019 – Alberta Edition;
- Handbook of Steel Construction, latest Edition;
- Concrete Design Handbook, latest Edition;
- Masonry Construction for Buildings; and,
- Wood Design Manual, latest Edition.

The environmental design parameters for the new lodge are as follows:

- **Snow Loads**

- o Ss = 1.3kPa + snow accumulation
- o Sr = 0.1kPa

- **One Day Rain**

- o 1/50 = 80mm

- **Wind**

- o 1/10yr = 0.37kPa
- o 1/50yr = 0.48kPa

- **Seismic**

- o Sa(0.2) = 0.144
- o Sa(0.5) = 0.097
- o Sa(1.0) = 0.060
- o Sa(2.0) = 0.0310
- o Sa(5.0) = 0.010
- o Sa(10.0) = 0.0041
- o PGA = 0.081
- o PGV = 0.064

## 5.3 FOUNDATIONS

### 5.3.1 LOWER FOUNDATION - PARTIAL BASEMENT

A geotechnical investigation has not been completed on the site to determine the optimal foundation support system. The building will be supported by shallow foundations (strip footings and pad footings) or supported by piles depending on the results from the geotechnical investigation. These foundations will support the cast in place concrete foundation walls and the superstructure above.

The proposed basement foundation walls are to consist of 250mm – 300mm thick cast in place concrete with built in pilasters around the perimeter of the building. The interior walls are to consist of 200mm – 250mm thick cast in place concrete with built in pilasters.

The interior support structure in the basement will consist of concrete columns and concrete beams supporting a concrete main floor slab over the basement. The columns and beams will generally be aligned with the load bearing wall lines and column locations of the superstructure above.

It is assumed at this time that a 125mm thick concrete basement slab on grade will be used. Due to the proximity of the lake, a dewatering system under the slab and around the foundation perimeter will be required. A minimum of 200mm thick washed rock base is required below the slab to allow for drainage. Weeping tile under the slab and around the perimeter is required. The washed rock will also serve as a radon layer. A radon barrier membrane will be installed directly below the slab. These assumptions will have to be reviewed once the geotechnical investigation has been completed.

### 5.3.2 UPPER FOUNDATION

The upper foundation walls adjacent to the basement are to consist of 200mm – 250mm thick cast in place concrete with built in pilasters where required. Concrete foundation walls are required around the perimeter of the building and in the interior of the building underneath load bearing elements of the superstructure.

It is assumed at this time that a 125mm thick concrete basement slab on grade will be used. To ensure a buildup of water in the basement does not occur from groundwater and/or surface water runoff, a dewatering system under the slab and around the foundation perimeter is required at the higher foundation level. Weeping tile under the slab and around the perimeter is required and is to be tied into the basement dewatering system. A minimum of 200mm thick washed rock base is required below the slab to allow for drainage. The washed rock will also serve as a radon layer. A radon barrier membrane will be installed directly below the slab. This assumption will have to be reviewed once the geotechnical investigation has been completed.

## 5.4 SUPER STRUCTURE

The building’s structure is a combination of one-storey building height up to five-storey building heights. The decision to frame the superstructure with wood construction has been determined to be the most cost effective. The primary gravity structural system will consist of load bearing wood stud walls along the corridors and between suites. In areas of the building where open spaces are necessary, wood columns and wood beams will be utilized. Alignment of all the wood elements extending through all the floor levels is critical for an effective and efficient structure. The building’s floor system from Level 2 to Level 4 will consist of engineered wood I-joists. The building’s geometry will dictate the depth

## 5.0 STRUCTURAL DESIGN

and spacing of the joists. It is anticipated that 38mm of lightweight concrete topping will be added to the floor to reduce the transmission of sound. The building roofs are flat and will be constructed from engineered wood I-joists supported by the walls and beams from the level below.

The lateral restraint systems throughout the building are to utilize plywood-based wood shear walls. It is anticipated that all the exterior walls, corridor walls, and possibly the interior walls between suites will need to be sheathed with plywood to resist lateral forces caused by wind and seismic events. At the ends of shear walls where uplift is occurring, hold down anchors are required to prevent overturning and lateral movement of the building.

## 6.0 Mechanical Design



# 6.0 MECHANICAL DESIGN

## 6.1 GENERAL

### 6.1.1 PURPOSE OF THE REPORT

The purpose of this report is to provide a detailed overview of the proposed mechanical systems and equipment for the Wheatland Lodge and Hospice Care Facility in order to promote further discussion and a deeper understanding of the systems and components herein.

The mechanical systems and the related equipment outlined here have been suggested based on the applicable codes and guidelines that apply to the design parameters for this facility, its use, and the occupants therein.

### 6.1.2 PROJECT OVERVIEW

- This facility will be a five-storey, non-combustible structure seniors' community located in Strathmore, AB, Canada.
- The building encompasses the following occupancies:
  - The resident rooms will be a mixture of Level 4 and 4D care units in accordance with B3 occupancy. There will be approximately 165 units, plus a six room hospice on the main floor.
  - The building also contains an on-site commercial kitchen, large common dining room, various amenities, laundry facilities, and surface parking.

### 6.1.3 MECHANICAL STANDARDS AND GUIDELINES

- The mechanical design will utilize the following Standards and Guidelines:
  - National Building Code, Alberta Edition (2019)
  - National Energy Code for Buildings (NECB) 2017
  - Authorities Having Jurisdiction (Town of Strathmore, Building By-Laws Requirements)
  - Alberta Fire Code, National Fire Code of Canada
  - National Plumbing Code (2015)
  - Alberta Health Services (AHS) Designated Supported Living in Lodges
  - Design Guidelines for Continuing Care Facilities in Alberta, August, 2018
  - Technical Design Requirements for Alberta Infrastructure Facilities, March, 2019
  - Alberta Blue Book, 2009
  - Canadian Electrical Code
  - National Fire Protection Association (NFPA)
  - American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE)
  - American Society of Plumbing Engineers (ASPE)
  - Applicable Canadian Standards Association (CSA) Codes including:
    - CSA Z317.1 Special Requirements for Plumbing Installations in Health Care Facilities
    - CSA Z317.2 Heating, Ventilation, and Air-Conditioning Systems for Health Care Facilities
    - B-52 Refrigeration Code
    - Canadian Gas Code B-149.1
    - Boiler and Pressure Vessel Act.

### 6.1.4 DESIGN PARAMETERS

- Outside Design Conditions
  - Winter design Temperature: -32°C
  - Summer design temperature: 29°C DB / 17°C WB
  - Rainfall intensity: 23mm/15 minutes
- Inside Design Conditions (CSA Z317.2):

Space	Inside Cooling Design Temperature (°C)	Inside Heating Design Temperature (°C)	Relative Humidity Range (%)	Minimum Total Air Changes Per Hour	Minimum Outdoor Air Changes Per Hour	Minimum Exhaust Air Changes Per Hour	Relative Pressurization
Activity Rooms	25	22	30-50	6	2	N/A	
Administrative / Offices	24	20	30-60	3	1	N/A	Eq.
Central Bath	28	25	30-50	12	3	N/A	Neg.
Clean Linen Storage	23	20	30-60	4	1	N/A	Pos.
Clean Utility	24	22	30-50	6	2	N/A	Pos.
Dining	24	22	30-60	6	2	N/A	
Housekeeping Closets	28	21	30-50	12	N/A	N/A	Neg.
Kitchen	24	20	30-60	10	2	10	Neg.
Laundry	23	20	30-60	12	3	N/A	Neg.
Lounges	24	20	30-60	6	2	N/A	Neg.
Public Washrooms	23	21	30-50	N/A	N/A	12	Neg.
Resident Bedrooms *	28	25	30-60	4	2	N/A	Eq.
Resident Corridors	28	24	30-60	3	1	N/A	Eq.
Resident Washrooms	24	22	N/A	N/A	N/A	9	Neg.
Soiled Linen	20	18	30-60	N/A	N/A	10	Neg.
Soiled Utility	28	21	30-50	N/A	N/A	10	Neg.
Storage	24	20	30-60	2	-	N/A	Eq.
Conference Room	24	20	30-60	10	(9.5 l/s)	N/A	Neg.
Janitor's Closet	N/A	N/A	N/A	N/A	N/A	10	Neg.
Locker Room for Staff	24	20	30-60	1	3	N/A	Neg.

# 6.0 MECHANICAL DESIGN

Assembly (Public)	25	21	30-50	12	4		Eq.
Administrative Offices	24	20	30-50	3	1	N/A	Eq.
Barber/Beauty Parlour	23	25	30-50	12	3	12	Neg.

Table-1: Reference List of Areas and Rooms

\*These values are from Technical Design Requirements for Alberta Infrastructure Facilities and the 2009 version of the 'Blue Book'

## 6.2 SITE SERVICES

### 6.2.1 DOMESTIC WATER / FIRE PROTECTION

- Potable water and water for fire protection will be provided by a dual 150mm (6") diameter water service that will enter along the East side of the building into a dedicated room located in the basement. The exact location will be coordinated with the Civil Engineer. Once inside, the service will be split into a 150mm (6") diameter potable water service and a 150mm (6") diameter supply to the fire protection system.
- The available pressure in the street will need to be confirmed to ensure it is adequate to service the building without a fire pump or potable water booster pump.
- The potable water service will be equipped with parallel cross connection control devices and pressure reducing valves to allow uninterrupted service while these devices within the building are being maintained.
- A separate 50mm (2") diameter supply and backflow with a dedicated meter will be provided for irrigation of the landscaped areas.
- Domestic water will be distributed horizontally on the main floor and will be routed through vertical risers to each resident room and other areas as required. These risers will be provided with valves in the main floor ceiling to allow for isolation of each riser.
- The fire protection system shall be distributed throughout the facility in accordance with local requirements and applicable NFPA codes. A fire department connection will be required within 3-5m of the primary entrance. It is likely that on-site fire hydrants supplied from the water main will be required to ensure they are within 45m of this connection.

### 6.2.2 SANITARY SERVICE

- A new 200mm (8") diameter sanitary sewer will exit the building deep enough to prevent freezing near the centre of the building and discharge to the city sewer by gravity. The exact location and available inverts will be coordinated with the Civil Engineer.

### 6.2.3 NATURAL GAS SERVICE

- The natural gas to the building will likely come in from the adjacent street. The externally mounted meter assembly must meet ATCO or Fortis requirements which will necessitate a 1.5 x 5m concrete pad located at the building and away from any building openings. At the meter assembly, it will be reduced to 5 psi (35 kPa) and distributed to the mechanical room, kitchen, and other natural gas fired equipment and appliances in the

facility where it will be further reduced to the required pressure. The incoming service location and size will be coordinated with the supplier.

### 6.2.4 STORM SERVICE

- The roof and other surface drainage areas will be collected and piped to the nearest storm water connection as required in coordination with the storm management report. It is likely these will be control flow roof drains.
- Subsoil drainage around the basement will be connected to the storm sewer leaving the building from a dedicated sump with backflow valve. The exact location and inverts will be coordinated with the Civil Engineer.

## 6.3 PLUMBING

### 6.3.1 FOUNDATION DRAINAGE

- A weeping tile system will likely be required around the basement foundation to control ground water. The water from this system will be drained through a sediment sump with a backwater valve and discharged to the storm sewer. Flow rate, size, and spacing of the weeping tile system will be based on permanent dewatering recommendations provided by the geotechnical consultant.

### 6.3.2 ROOF DRAINAGE

- Roof drainage will be provided as required by code based on the Civil Engineer's requirements and the location of the roof drains as outlined by the Architect and the Structural Engineer.
- Rainwater from the assumed control flow roof drains shall be collected in a concrete retention tank and released as dictated by the Civil Engineer. The exact location will be coordinated with the design team. The tank size shall be determined by the Civil Engineer based on municipal regulations and the Rain Water Management Plan.

### 6.3.3 DOMESTIC HOT WATER

- Three (3) natural gas fired water boilers with heat exchangers will be used to generate and store domestic hot water at 60°C (140°F). A pair of digitally controlled mixing valves will mix the water temperature down to 49°C (120°F) for use by the public and in the residence units. Commercial kitchen and laundry will be supplied with domestic hot water at 60°C (140°F).
- A domestic hot water recirculating system will ensure minimal time is required to obtain hot water throughout the building. This recirculating system will have a dedicated pump(s) operated based on temperature in the line and/or time of day. All DHW recirc lines will be within 1500mm of the point of use prior to connecting to the heaters.

### 6.3.4 WATER SOFTNESS

- Water softening will be considered for the domestic hot water system and piping serving the humidifiers only, following discussions with the Owner. The cold-water distribution will remain untreated.

# 6.0 MECHANICAL DESIGN

## 6.3.5 PLUMBING FIXTURES

- The plumbing fixtures will be suitable for this application. Water Closets in all living units will be flush tank with minimum 419mm (16 1/2") high floor mounted elongated bowls with open front seats.
- Showers will be barrier free and will meet requirements of local authorities. Shower stalls will be built up stalls with a recessed concrete floor. Shower valves will be easily controlled and the shower head will be a telephone type with 1800mm flexible hose.
- Lavatories for the suites shall be drop in porcelain suitable for the millwork proposed, with elongated handle with easily determined hot and cold and P-trap drain.
- Bariatric units will have suitable fixtures for this use in these areas including specific floor mounted toilets, toilet seats, and lavatories.
- Hand wash sinks and lavatories in public washrooms will have hands free, laminar flow faucets with a wall mounted china bowl with no overflow.

## 6.3.6 RESIDENT ROOM DRAINAGE

- Resident room washrooms and sinks will be connected to a common sanitary stack which serves one resident room per floor before connecting to the mains under the slab. The fixtures in the rooms including the water closet, lavatory, shower, and sink will be connected to this stack.
- Each sanitary stack will have its own vent stack. The shower will be wet vented through the lavatory up to the connection to the vent stack.

## 6.3.7 KITCHEN DRAINAGE

- The commercial dishwasher and pot sink will be provided with 60°C (140°F) domestic hot water. 49°C (120°F) water will be piped to the hand wash sinks.
- The commercial dishwasher will be served by a DHW line and equipped with a drain cooler to lower the discharge water temperature below 70°C (160°F) and will have a dedicated low profile grease interceptor on the discharge.
- The pot sink and other fixtures in the kitchen will be piped to an easily serviced, recessed grease interceptor.

## 6.3.8 COMMERCIAL LAUNDRY DRAINAGE

- Each clothes washer will be supplied with a 25mm (1") diameter cold water and 60°C (140°F) softened hot water.
- The washing machines will discharge into a stainless-steel trough and lint interceptor prior to draining to the sanitary sewer.

## 6.3.9 ELEVATOR PIT DRAINAGE

- Elevator pits will drain into a dedicated containment sump. Effluent from the elevator pits will be pumped into the sanitary sewer. The elevator pit will be vented to atmosphere by a separate dedicated sewer vent.

## 6.4 HEATING, COOLING, AND VENTILATION

The configuration of the building into neighbourhoods presents some challenges for the mechanical systems in regards to maintaining the integrity of the fire/smoke separations as well as the main floor amenity and common areas in addition to the Hospice. These air handlers will typically be modulating natural gas heating with DX cooling, heat recovery, MERV 13 filters, and humidification. Our initial concept will include separate air handling units and systems as follows:

- Main Floor Hospice (2,500 L/sec)
- Main Floor Amenity Spaces (7,000 L/sec)
- Main Floor Dining Room (3,000 L/sec)
- North Neighbourhoods (Levels 2-5) (7,000 L/sec)
- E Neighbourhoods (Levels Main to 5) (8,500 L/sec)
- SW Neighbourhoods (Levels Main to 5) (8,500 L/sec)

## 6.4.1 RESIDENT ROOMS

- The resident rooms will have individual room control for heating and cooling. To accomplish this each room will be served by a variable volume air (VAV) handling unit with energy heat recovery (ERV). This unit will provide conditioned air (17-22°C) to the resident rooms and related common areas as per CSA requirements.
- Each resident room will be served by a variable volume box (VAV box) with a reheat coil to provide independent temperature control. The air in the rooms will be ducted to grilles along one side of the room out to the perimeter. In this way, each resident can control their space temperature to within the temperature parameters as noted in the code and guidelines (25-28°C).
- Two supply air options are being considered for further review.

**OPTION 1:** 100% Outdoor Air System (4 air changes per hour total).

- In this system, the required 4 air changes to each residential unit will be composed of 100% outdoor air. All the air is exhausted through the washroom and will be used to condition the outdoor air through a heat recovery unit in the central air handler located on the roof.
- An advantage of this system is that it minimizes the potential for cross contamination of air streams by not mixing airflows from resident rooms at the unit.
- A disadvantage of this system is that it results in higher operating costs in heating and cooling all the outdoor air required.

**OPTION 2:** 50% Recirculation System (4 air changes supply total, with 2 air changes return and 2 air changes outdoors).

- In this system, the 4 air changes per hour (ACH) required will be composed of 2 ACH from the building return and 2 ACH from the outdoors. A return grille in the space returns 50 % of the air to the air handling unit through the building return air ductwork. The other 50% (2 air changes) are exhausted through the unit washroom and are used to condition outdoor air via a heat recovery unit in the air handling unit.
- An advantage of this system is that it minimizes operating costs in tempering only 50% of the outdoor air volume compared to the 100% outdoor air system noted above.
- A disadvantage of this system is higher construction costs as you are effectively installing three duct systems (Supply, Return, and Exhaust), and even though you are filtering the return air, there is a possibility of recirculating contaminated air, albeit filtered.

- The air from these air handling units and the exhaust and return will be distributed horizontally in the top floor ceiling space and then ducted to each floor in rated vertical shafts where the ducts will branch out on each floor. In accordance with the current code, each branch duct on each floor will require a fire/smoke damper where the duct leaves the shaft.



## 6.0 MECHANICAL DESIGN

### 6.4.2 RESIDENT CORRIDORS, DINING, AMENITIES, ADMINISTRATION, + OFFICES

- The resident corridors, dining room, serveries, amenity areas, administration, and offices will be heated, cooled, and ventilated with forced air via dedicated Variable Volume Roof top units (RTUs) with heat recovery.
- Air from the roof top units will be ducted down shafts to VAV boxes at each floor and in each resident room. The VAV boxes will be equipped with hydronic reheat coils to provide individual room temperature control while maintaining the minimum required air changes.
- In some areas with additional large perimeter windows or walls, perimeter heat will be provided via ceiling mounted radiant panels to offset the higher heat losses in these areas. This will be coordinated with the reflected ceiling plans.
- Each RTU will be equipped with a variable speed return fan that will be wired to the Building Management System (BMS). The BMS will monitor a building pressure sensor and control the exhaust speed to maintain building static pressure.
- Ventilation air to the zones will be supplied to meet CSA requirements as per Table-1.

### 6.4.3 HUMIDIFICATION

- The CSA Z317.2 standard states that a facility of this type requires a minimum of 30-60% RH throughout the year. This range of values is difficult to maintain in this climate without the addition of a steam humidifier system. Therefore, we are proposing to include natural gas steam humidifiers in each air handler and in branch ductwork serving specific areas as required.
- It should be noted that in order to maintain 30% relative humidity in the winter, special care should be taken with the building envelope to minimize thermal bridging and cold spots that may lead to condensation on the walls or fenestrations. To control humidity in the space, there will be a feedback control loop that resets the RH levels based on the outdoor air temperature.

### 6.4.4 COMMERCIAL KITCHEN

- The kitchen area in the basement level will be served by a dedicated direct fired make up air unit with cooling that will be interlocked to a hood exhaust fan. Exhaust fan capacity will be coordinated with the Kitchen Consultant.
- We estimate this system to provide approximately 4,720 L/s (10,000 cfm).
- Grease laden vapours will be ducted from the kitchen hood up to the roof mounted grease fan in welded carbon steel duct, located within a dedicated 2 hour fire rated shaft.
- Hot humid air from above the dishwasher will be ducted up to the roof mounted exhaust fan in aluminum ductwork within a dedicated 2 hour fire rated shaft. Exhaust fan capacity will be coordinated with the Kitchen Consultant. We estimate the system to exhaust approximately 425 l/s (900cfm).
- Additional cooling air will be ducted from the central VAV air handling unit to serve this kitchen space and maintain a comfortable temperature in the space when the central exhaust/make up air system is not running.

### 6.4.5 PUBLIC WASHROOM/SOILED LINEN

- Public washrooms, soiled linen, and similar areas will be ventilated by a dedicated exhaust system that will

draw out a minimum of 10 L/sec/m<sup>2</sup> (2.0 cfm/ft<sup>2</sup>) to maintain the 12 ACH that will be required. These fans will typically operate 24/7.

### 6.4.6 COMMERCIAL LAUNDRY

- Dryer exhaust from the natural gas fired commercial laundry equipment will be ducted up a shaft to the roof in individual shafts as these are gas fired appliances.
- Fresh air for the dryers will be ducted from a louvre above grade into a cold plenum that will be heated with electric heat behind the dryers. A motorized damper, interlocked with the dryers, will close the outside air duct when the dryers are off to prevent over-cooling of the laundry room.
- The laundry room will be ventilated at 12 air changes per hour.

### 6.4.7 HEATING

- The heating for the building will be provided by four (4) high-efficient (95%+) condensing boilers of 587kW (2,000,000 BTUH) capacity each and 5:1 turndown ratio. The heating water temperature will be scheduled based on outdoor air temperature and will be circulated by in-line pumps running in parallel with Variable Frequency Drives (VFDs) to modulate energy use based on demand in the building.
- This heating water system will serve VAV reheat coils located in each resident unit and other areas as well as force flows, unit heaters, and other terminal heating units located in vestibules, the loading dock, and other areas of high heat loss.
- All heating terminal units will be sized based on a 16.6 °C delta T (30°F) to optimize flows and pipe sizing throughout the facility.
- The outside air for any smaller ERV units will be preheated with hot glycol coils to prevent freezing the core or heat wheel.
- The central mechanical room will be located in the basement. As such, the boilers should be vented up to above the highest roofs to ensure these contaminants clear the building envelope. These appliances will also require combustion and relief air from the room. These can be accommodated at a lower level such as on the lower roof.

### 6.4.8 DUCT DISTRIBUTION

- The main duct distribution originating from the roof mounted air handlers will be primarily horizontal in the top floor ceiling or attic space where the ducts will branch off to the various shafts to serve the mostly stacked living units. This will allow for the most economical means of distributing the air where it needs to go and minimize costs for items such as fire/smoke dampers.
- Similarly, exhaust and return air will be ducted into the vertical shafts and collected in the top floor expanded ceiling space and returned to the air handlers on the roof.

### 6.4.9 RADON MITIGATION

- As required by the building code, we are proposing to use a method termed Active Soil Depressurization (ASD), wherein there will be a number of passive radon mitigation pits located under the slab on grade areas that will have a 150mm diameter (6") pipe from the pit up and through the roof where it will be capped. In the event that the radon levels are found to exceed the regulated maximum value of 200 becquerels per m<sup>3</sup>, a fan can be installed on the top of the pipe to increase the depressurization rate.

# 6.0 MECHANICAL DESIGN

## 6.5 SMOKE MANAGEMENT

### 6.5.1 VENTING TO AID FIREFIGHTING

#### Resident Rooms

- In compliance with Building Code, resident rooms will be equipped with operable windows. The operable portion of the windows will add up to not less than 1% of the exterior wall area of each storey and be uniformly distributed. Windows designated for firefighters' use will be clearly labeled if and where required.

#### Commons Areas, Dining Rooms, and Services

- Dedicated smoke exhaust shafts and smoke exhaust fans will exhaust the common areas above grade (resident dining and serveries) and occupied spaces below grade in the event of a fire. The system will be designed to exhaust one smoke compartment at six (6) air changes per hour. Fire smoke dampers located at each floor will provide the required zoning. Switches on the fire alarm panel and will allow firefighters to override the system.

#### Occupied Areas at Basement Level

- Smoke exhaust will be provided for occupied areas on the basement level.

#### Stairwell Above Grade

- Stairwells above grade will be provided with an operable relief damper at the top to allow for gravity relief when the door at grade is open. This will need to be coordinated with Architectural.

### 6.5.2 BELOW GRADE STAIR PRESSURIZATION

A dedicated (one per stair) fan will supply 475l/s (1,000) cfm of tempered outdoor air to each below grade stair.

## 6.6 FIRE PROTECTION

- A zoned, wet pipe sprinkler and standpipe system designed and installed to the requirements of NFPA and the local authorities will be provided to ensure adequate fire protection for all areas of the building.
- Sprinkler heads in all drop ceilings will be semi-recessed pendant style heads with white escutcheons. Zoning shall meet NFPA 13 and local authority requirements.
- Dry sprinkler loops will be considered for areas subject to high risk of freezing.
- Dry head sidewall sprinkler heads will be provided for other areas subject to lower risk of freezing including: the emergency generator room and the laundry dryer intake plenum.
- Location of the fire department connection will need to be determined in conjunction with the local Fire Department. This typically is to be located within 3-15m from the designated primary entrance and requires a fire hydrant within 45m.
- The stairwells will house the standpipes and hose valves that are required on each level.

## 6.7 SYSTEM REDUNDANCY

There shall be at least one independent backup component for the following system:

- Boilers
- Heating water pump system
- Sanitary sump pumps
- Storm sump pumps
- Diesel fuel pump
- Elevator sump pumps.

## 6.8 CONTROLS

- A complete Direct Digital Computer (DDC) Building Management System (BMS) that is BACNet compliant will be provided. This system front end interface, automatic controls system will be utilized to control the central mechanical systems. From a web-based or on-site personal computer, the building operator will be able to set up, monitor, and adjust set points for the main systems and equipment. This will include the central air handling units, supply air temperature at the air handlers, humidity levels, boilers, central pumps, DHW, heating water loop temperature, etc.
- In each suite, a local electronic thermostat with digital readout and resident push-button control will control the room temperature by modulating the heating valve for the reheat coil.
- In the administration, offices, and amenity areas, local thermostats with either lock boxes or limits on temperature adjustment will be provided.

## 6.9 MATERIALS

### 6.9.1 HEATING WATER

- Grooved mechanical joints will be allowed in mechanical rooms only.
- Welded and threaded joints will be used outside of mechanical rooms. Piping and fittings will be Sch. 40 black malleable steel or type L copper.

### 6.9.2 POTABLE WATER

- Copper solder or 'Propress' fittings will be allowed. Type 'L' copper pipe only.
- PEX-A with cold expanded fittings will be allowed in resident rooms, suitable for this application.

### 6.9.3 NATURAL GAS

- Steel gas piping will have welded and threaded joints on copper piping, 'Propress' or soldered fittings will be allowed.

### 6.9.4 DRAINAGE

- Cast iron pipe or type DWV copper is recommended throughout for the drainage system. In our experience, the cast iron is slightly quieter and there are fewer issues with firestopping. XFR pipe with suitable fire stop will be considered.

## 6.0 MECHANICAL DESIGN

### 6.9.5 KITCHEN EXHAUST

- Ducts will be stainless steel in exposed areas and welded 16 Ga. black iron in concealed areas.

### 6.9.6 DISHWASHER EXHAUST

- Ducts will be aluminum with watertight seams.

### 6.9.7 FIRE PROTECTION

- Victaulic fittings and Sch. 10 steel pipe will be accepted for the larger pipe runs and diameters. On the floors, the use of orange plastic 'Blazemaster' piping will be accepted if approved by the local authorities.

## 6.10 DIESEL EMERGENCY GENERATOR

- Diesel emergency generator shall be prepackaged and consists of belly tank, fuel pumps, high-low pump control and alarm, overflow alarm, and emission reduction system will be provided by the electrical division.
- The mechanical division shall install the diesel muffler and discharge (using Schedule 80 black steel piping) to exterior. Termination shall be away from building intakes.
- The mechanical division shall install ventilation system consisting of exhaust plenum (complete with silencers, exhaust dampers, and return dampers) and outdoor air plenum (complete with combustion damper and ventilation damper). Return dampers shall be normally open. Combustion damper shall open on generator start. Room temperature sensor shall modulate ventilation, exhaust, and return air dampers to maintain generator room temperature at set point.
- There shall be an explosion proof (Class 1 Division 1) electric unit heater located in the fuel storage room and the diesel generator room.
- A separate exhaust fan and transfer air louvre will be provided for continuous ventilation.



## 7.0 Electrical Design

# 7.0 ELECTRICAL DESIGN

## 7.1 INTRODUCTION

The purpose of this design report is to provide a brief overview of electrical systems to be applied to the proposed new Wheatland Lodge and Hospice Care Facility. The electrical systems for this project will be designed in accordance with the requirements of the Alberta Building Code 2019, Alberta Fire Code 2014, National Energy Code of Canada for Buildings, and Canadian Electrical Code 2018.

This report is to outline the major components of the electrical systems. The detailed equipment specification and installation requirements shall follow.

## 7.2 MAIN POWER SERVICES

The 347/600V 800A is recommended for building service since all the major mechanical equipment will be rated 600V. The power will be provided by site pad mounted transformer, and the transformer will be located outside the kitchen area. Service entrance point will be coordinated with the utility company during the detailed design stage.

## 7.3 EMERGENCY POWER SYSTEM

An emergency generator will be installed for the building's emergency power system. The emergency power system will support the building's emergency lighting system, elevators, kitchen cooler/freezer, and mechanical systems. The generator will be 347/600V, and the size will be determined according to above loads. The indoor generator will be located in the on-site generator room and the transfer switch will be located in the main electrical room.

## 7.4 TELEPHONE, FIBRE, AND CABLE TV SERVICES

Telephone, fibre, and cable TV services will be brought to the building. Service entrance point will be coordinated with the utility company during the detailed design stage. Both service conduits will be 100mm.

## 7.5 SITE LIGHTING AND POWER

- A combination of LED sourced pole mounted lights, bollards, wall packs, and ceiling lights under canopies will be designed in various locations to meet IES recommendations.
- Outdoor lights will be controlled by photo cell and timer clock through a central light control system.
- Car plugs will be designed at locations as per client's preference.
- Car plugs will be controlled by both timer and thermometer.

## 7.6 MAIN ELECTRICAL DISTRIBUTION

- The 347/600V 800A main electrical distribution will consist of one three phase four wire main electrical distribution panel (MDP) located in the main electrical room.
- Both normal and emergency power 347/600V sub-distribution panels will be located in the electrical room on the main floor of each block of the building. The 347/600V power will serve major mechanical equipment, and two dry type transformers (one for normal power and one for emergency power) will be installed to step down the power to the 120/208V system. The 120/208V central distribution panelboard will be located in the electrical room for each block of the building.
- 120/208V branch circuit panels will be located in various locations throughout the building.

## 7.7 INTERIOR LIGHTING

Interior lighting will be LED type pendant lights, recessed lights; surface mounted lights will be designed in various locations to meet IES recommendations.

## 7.8 EMERGENCY AND EXIT LIGHTING

- Emergency and exit lighting will be located to conform to the requirements of the Alberta Building Code. The exit signs will be monitored by a networked digital metering system.
- The exit signs will be self tested through the WiFi network.

## 7.9 DATA AND TELEPHONE SYSTEM

- Data and telephone outlets will be designed in all Instructional and Administration areas.
- WiFi access points will be throughout the entire facility.
- CAT 6 cables will be terminated to the main server room.
- The phone system will be interconnected with the PA system to perform paging functions.

## 7.10 PA SYSTEMS

Speakers will be located throughout the building. Zone paging function will be set up for paging each floor separately.

## 7.11 TELEPHONE AND CABLE TV

The media communication panel will be installed in all the suites. The residences will have both telephone and cable TV services.

## 7.12 FIRE ALARM SYSTEM

- An addressable two stage fire alarm system will be designed in compliance with the Alberta Building Code. The system will have built-in voice evacuation system.
- The fire alarm panel will be located in the main vestibule and have an annunciate panel located on each floor main area.
- The system will perform shutdown, start up, and smoke controls for the mechanical system during fire alarm mode.

## 7.13 SECURITY SYSTEM

A vendor supplied security system complete with CCTV and card access system will be designed and installed as per direction from the client.

## 7.14 EMERGENCY CALL SYSTEM

A vendor supplied emergency call system will be designed and installed as per direction from the client.

## 7.15 MECHANICAL CONTROLS SYSTEM

A Motor Control Center (MCC) will be installed for group motor controls in the mechanical room.

## 8.0 Civil Design



## 8.0 CIVIL DESIGN

### 8.1 SITE GRADING

The site will be graded so drainage is directed away from the building location. A preliminary grading drawing is enclosed (C1.0 plan) and shows the grading concept, drainage within the proposed parking lot, etc. Due to the topography and its proximity to the lake, drainage will be directed towards multiple, strategically placed storm water detention areas that outfall into Kinsman Lake. Detailed design will finalize storm water detention locations, sizes, and operations.

### 8.2 STORM SERVICING + STORM WATER MANAGEMENT

As part of storm water management and in order to minimize downstream impact, post development peak flows will be reduced to an acceptable level mandated by the Town. This will include surface on-site detention likely in the form of detaining runoff behind curb cut sized to release at a predetermined rate or creating a trap-low in the landscaped area with a culvert outlet and orifice plate.

Roof detention is anticipated for storm water management purposes.

The Town of Strathmore is contacted regarding storm water management requirements and their expectations for the storm water outlets to Kinsman Lake as suggested in C1.0 plan.

It is anticipated the Town will require treatment of runoff before entering the lake. Low Impact Design (LID) measures will be taken into consideration when completing storm water management for the development.

Two existing culverts within URW Plan 941 1773 provide drainage water supply from the canal to the lake. The proposed parking lot interferes with existing drainage. In order to maintain supply, it is anticipated that the culvert can be connected and parking lot can be constructed. This will be further discussed with the Town at the design stage.

### 8.3 WATER SERVICING

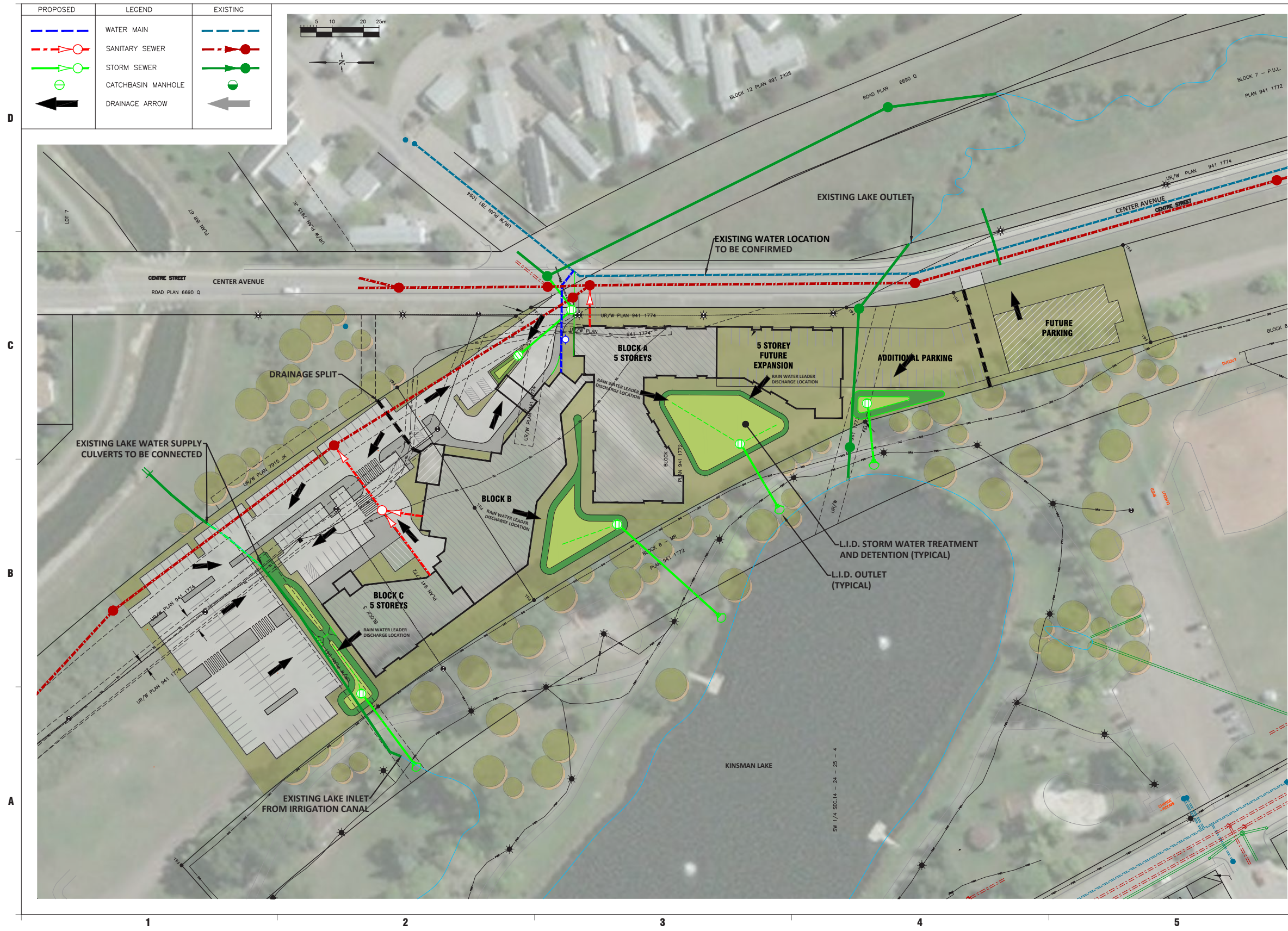
Water service is extended from Center Avenue and enters the building at the north of Block B. However, existing water main location shown on Center Avenue has not been confirmed. The Town of Strathmore is contacted for record information. A separate water service may be required for irrigation of the landscaped areas. Hydrant location(s) will be coordinated with Berry Architecture.

### 8.4 SANITARY SERVICING

Multiple sanitary services are extended from the existing sanitary main to service Block A, B, and C at this time. Sanitary service size and locations will be confirmed in coordination with the mechanical engineer.

A vendor supplied security system complete with CCTV and card access system will be designed and installed as per direction from the client.

# 8.0 CIVIL DESIGN



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**SEALS**

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**KEYPLAN**

**REVISIONS & ISSUES**

NO.	DATE	DESCRIPTION
1	OCT 07/18	ISSUED FOR CONSTRUCTION

**PROJECT TITLE**  
**WHEATLAND LODGE & HOSPICE CARE FACILITY**  
**STRATHMORE, AB**

**DRAWING TITLE**  
**PRELIMINARY SERVICING & GRADING FIGURE**

SCALE:	1:500
DRAWN:	JRR
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DATE:	FEB 21
NO.	18-001
<b>C1.0</b>	

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## 9.0 Sustainable Design

# 9.0 SUSTAINABLE DESIGN

## 9.1 SUSTAINABLE DESIGN ELEMENTS

The importance of developing a sustainable project is becoming more significant every day as our fragile environment is put under greater pressure. There are several environmentally sustainable energy systems that could be implemented in the new Wheatland Lodge and Hospice; these include geothermal, passive solar systems, energy re-circulation systems, and provisions for a photo-voltaic system to be installed in the future. The important element for implementing any environmental system is to ensure that it is fully integrated into the overall building system. During schematic design and design development, we will review all options in the interest of using resources in the most effective way possible and developing the most efficient building that can be achieved.



## 10.0 PROJECT BUDGET + NEXT STEPS



# 10.0 PROJECT BUDGET + NEXT STEPS

## 10.1 PRELIMINARY PROJECT BUDGET

This proposed project has been developed on the premise of providing the highest possible care and lifestyle levels to the seniors of Strathmore and surrounding communities. It is extremely important for seniors to age in their local communities and to be provided with the best quality of support. This creativity goes beyond the project's physical design and includes operational, financial, and potential project partnerships. The WHMB has developed a strong collaboration with the WAHS to develop a full aging in place community.

We have developed a preliminary project budget that reflects the current construction markets.

<b>Total Building Area</b>	<b>201,423 sq.ft</b>
Land Value	\$ 1,715,000.00
Land Value / sq.ft	\$8.51
Round up and use	\$8.50
Lodge Building Area	154,277 sq.ft
Number of total Suites	165
Area per Room	935 sq.ft

### LODGE SUITES: 115 ROOMS

Lodge Suites	107,527 sq. ft.	\$ 220 / sq. ft.	\$ 23,655,940.00
Utilities + Ground work	10%		\$ 2,365,594.00
Subtotal			\$ 26,021,534.00
Contractor's Fee / Prof. Fee	15%		\$ 3,903,230.10
Subtotal			\$ 29,924,764.10
Contingency	6%		\$ 1,795,485.85
Land Value			\$ 913,979.50
<b>Total</b>			<b>\$ 32,634,229.45</b>

### SL4 SUITES: 20 ROOMS

SL4 Suites	18,700 sq. ft.	\$ 220 / sq. ft.	\$ 4,114,000.00
Utilities + Ground work	10%		\$ 411,400.00
Subtotal			\$ 4,525,400.00
Contractor's Fee / Prof. Fee	15%		\$ 678,810.00
Subtotal			\$ 5,204,210.00
Contingency	6%		\$ 321,252.60
Land Value			\$ 158,950.00
<b>Total</b>			<b>\$ 5,675,412.60</b>

### SL4D SUITES: 30 ROOMS

SL4 Suites	28,050 sq. ft.	\$ 220 / sq. ft.	\$ 6,171,000.00
Utilities + Ground work	10%		\$ 617,100.00
Subtotal			\$ 6,788,100.00
Contractor's Fee / Prof. Fee	15%		\$ 1,018,215.00
Subtotal			\$ 7,806,315.00
Contingency	6%		\$ 468,378.90
Land Value			\$ 238,425.00
<b>Total</b>			<b>\$ 8,513,118.90</b>

<b>Total Lodge Building</b>			<b>\$ 46,822,760.95</b>
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### HOSPICE PRELIMINARY BUDGET

Main Floor	9,526 sq. ft.	\$ 220 / sq. ft.	\$ 2,095,720.00
Utilities + Ground work	10%		\$ 209,572.00
Subtotal			\$ 2,305,292.00
Contractor's Fee / Prof. Fee	15%		\$ 345,793.80
Subtotal			\$ 2,651,085.80
Contingency	6%		\$ 159,065.15
Land Value			\$ 80,971.00
<b>Total</b>			<b>\$ 2,891,121.95</b>

### 5TH FLOOR PRELIMINARY BUDGET

5th Floor	37,620 sq. ft.	\$ 220 / sq. ft.	\$ 8,276,400.00
Parkade	17,104 sq. ft.	\$ 105 / sq. ft.	\$ 1,795,920.00
Subtotal			\$ 10,072,320.00
Utilities + Ground work	10%		\$ 1,007,232.00
Subtotal			\$ 11,079,552.00
Contractor's Fee / Prof. Fee	15%		\$ 1,661,932.80
Subtotal			\$ 12,741,484.80
Contingency	6%		\$ 764,489.09
Land Value			\$ 319,770.00
<b>Total</b>			<b>\$ 13,825,743.89</b>

# 10.0 PROJECT BUDGET + NEXT STEPS

PROJECT BUDGET SUMMARY	
Lodge Suites	\$ 46,822,760.95
Hospice Suites	\$ 2,891,121.95
<b>Subtotal</b>	<b>\$ 49,713,882.89</b>
5th Floor Independent Living	\$ 13,825,743.89
<b>Project Total</b>	<b>\$ 63,539,626.78</b>



## 10.2 NEXT STEPS

WHMB has made a sincere commitment to provide seniors in the region with the highest possible levels of care and life styles. Since the application of the RFEIOIQ, WHMB has worked hard to demonstrate that a new seniors' housing community is needed in Strathmore to fill a significant housing gap. They engaged the services of Berry Architecture + Associates to assist with conducting an extensive community engagement process to truly determine what the local community believes is needed in Strathmore. These sessions were well attended and demonstrated the commitment of the residents of all the local communities to this proposed project.

At the current time, WHMB has worked with Berry Architecture to develop a great multi-use facility that partners with local groups to create a strong community housing complex. We have worked with WAHS, local care providers, nursing and medical providers, and local service groups to develop a proposed plan that will bring the community together to fill a missing housing gap in Strathmore.

The WHMB is ready to move forward to the next stage and would be in a position to have a Development Permit (DP) in about 45 days. By using a fast-tracked Construction Management (CM) method of project delivery, the project could be started and in the ground in 60 – 90 days. WHMB is exploring various unique financial options to develop a strong partnership with the provincial government and work together to support the seniors in Strathmore and region.

The next steps would be to begin finalizing the project design in concert with AHS and Alberta Seniors staff members, submit the proposed project drawings to the Town of Strathmore for DP approval, and release a rapid turnaround CM proposal package to engage the services of an experienced CM contractor with years of experience in seniors' housing. WHMB is committed to this project and to ensuring that the seniors of Strathmore and region have the housing choices that they need and deserve. WHMB wants to work in a positive and supportive partnership with the Province of Alberta to develop a project that will be a win and will support the growing number of seniors in the region. A project such as this will keep the seniors in their home communities and take pressure off surrounding areas to provide housing for those who would otherwise have to move there.

The strength of our province is founded on the hard work of the seniors of Alberta, and the WHMB wants to ensure that every senior in the region has the housing and care options that they deserve and need.