

Sommet Blanc Park City, Utah

Olson Kundig

Construction Documents Fire & Life Safety Code Report

Holmes Fire

21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

ISSUE AUTHORIZATION

Sommet Blanc, Park City, Utah

dent need-	378377776 SATE Y			
ersion	Date	Status	Prepared	Review
Α	04/15/2021	Preliminary draft - Schematic Design	PG	BP
В	01/07/2022	100% Design Development	PG	GS
С	04/22/2022	90% Construction Documents	PG	GS
D	05/23/2022	Building Permit Submittal	PG	GS
				-

/ersion	Extent of Revision
В	Updated report to reflect changes to Buildings A, B and C, which are now high-rises
С	Updated report to reflect that Buildings A, B and C are now a single high-rise building
D	Updated report in response to design team comments

This report caters specifically for the requirements for this project, the client and associated regulatory / approval process. No warranty is intended or implied for use by any other third party and no responsibility is undertaken to any other third party for any material contained herein.

To the extent permitted by law, all rights are reserved and no part of this publication covered by copyright may be reproduced or copied in any form or by any means without the written permission of Holmes Fire.

Patrik Gustafsson

Fire Safety Specialist

Geza Szakats Project Director

> Sommet Blanc, Park City, Utah 21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

1.4 Building and Fire Codes for the Project . Basis of Design / Key Issues.... Remoteness of interior exit stairways. EVAC Fire Alarm System .. 3.3.1 Protection of HSS Columns... 3.4 Exit Stair Discharge 3.6 Separation for R-2 Dwelling Units..... 3.7 Site Fire Department Access 4.1 Occupancy Classifications.... 4.1.2 Fire- and Smoke-Resistive Separations ... 4.2 Building Construction

> Sommet Blanc, Park City, Utah 21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

> > CODE SUMMARY

Park City, Utah

Allowable Height & Number of Stories - 180 ft / 12 (

F-1 Industrial Boiler and Chiller rooms

F-2 Industrial Electrical, Mechanical rooms

is present in quantities over the exempt amounts.

as per UBC Section 508.3.

and warehouse

Code Topic

Type of

Construction

Building Height

(UBC Section

Occupancy

Classification

(UBC Chapter 3)

Separation (UBC

Section 508)

Combustible Exterior Cladding and Insulation .. 4.7 Interior Finishes and Decorative Interiors...... Interior Wall and Ceiling Finish Requirements Combustible Decorations and Trim Means of Egress Illumination.. Minimum Capacity of the Egress System Travel Distance / Common Path of Egress / Dead End Corridors

> Sommet Blanc, Park City, Utah 21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

Summary

Proposed Height & Number of Stories -98 ft / 10 stories above grade & 2 stories below

A-2 Assembly: Restaurants and dining spaces, including associated kitchens

assembly spaces and fitness areas

S-2 Storage: Car parking, low-hazard storage and bicycle storage

It is assumed that the limited quantiles of hazardous materials in the building will be less

created. This Report will be amended as necessary if the amount of hazardous materials

than the exempt quantities in UBC Section 414 and a Group H Occupancy will not be

The project will be a mixed-use development consisting of Nonseparated Occupancies

Accessory occupancies cannot exceed 10% of floor area per story.

R-2 Residential Apartments - UBC 420 requirements apply

B Business Offices, lounges with an occupant load less than 50 people

Lounges with an occupant load of 50 people or more, flexible use

Moderate-hazard storage including waste storage, loading dock,

Accessible Means of Egress... Portable Fire Extinguishers 4.10 Fire Detection and Occupant Notification Systems. Fire Alarm System Emergency Voice Alarm-Signaling System... 4.10.3 Initiating Devices 4.11 Sleeping Area Requirements (Low Frequency Sounders) Supervisory Signals... 4.15 Emergency and Standby Power... 4.15.1 Secondary Power..... Systems on Emergency or Standby Power ...

Emergency Responder Radio Coverage..

ommon Path of Travel Limit:

B, F-1, F-2, S-1 & S-2 = 100 ft

B, R-2, F-1, F-2, S-1 & S-2 = 50 ft

Maximum Allowable Area per Floor:

144,000 square feet (Group S-1)

237,000 square feet (Group S-2)

Primary Structural Frame: 1 hour

and 1 hour where 10 ft < FSD ≤ 20 ft

Floor and secondary beams: 1 hour

Roof and secondary beams: 1 hour

protected corridor connected to an exit enclosure accessible from the exterior.

Parking garage (Ordinary Hazard Group 1): 42,000 gallons

hose stream demand, not the entire inside plus outside 250 gpm hose stream.

approved method or assembly that has a fire-resistance rating of not less than 1 hour.

Emergency power will supply the following systems at a minimum (10 seconds transfer time):

secondary water supply tank is required to be located adjacent to the fire pump room

3.1.8 Secondary Water Supply Tank

3.1.9 Secondary Power Supply

8-hour operation of the fire pump.

Exterior and Interior Bearing Walls: 1 hour

A dedicated, 2-hour fire-resistance-rated fire pump room is required, with direct exterior access or via a

A secondary water supply tank is required to serve the automatic fire sprinkler system of the building. The

The volume of the tank depends on the most demanding automatic fire sprinkler system in each building. The

usable capacity of the secondary water supply tank is estimated to be at least the following for the building:

These volume calculations assume that the secondary water supply tank only includes the 100 gpm "inside"

building will be separated from areas of the building other than the room the generator is located in by an

Unlimited square feet (other occupancies)

Approximate Proposed Gross Building Area:

Approximate Building Area of the Largest Story:

ead-end Carridor Limit:

A -2 & A-3 = 75 ft

R-2 = 125 ft

A = 20 ft

Code Topic

Means of Egress

(UBC Chapter

Building Areas

(UBC Section

Fire Resistance

Ratings (FRR)

(UBC Section

Sommet Blanc, Park City, Utah 21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

Exit Access Travel Distance Limit:

A, F-1, R-2 & S-1 = 250 ft

Stairs = 0.2 in per person

All Other = 0.15 in per person

Summary

2018 edition of the Utah Codes (primary governing codes) with Park City Amendments

Building A/B: 258,000 SF

Building C: 97,000 SF

Building A/B: 40,000 SF

Exterior Non-Bearing Walls: 0 hour where Fire Separation Distance (FSD) exceeds 20 ft,

nterior Non-Bearing Walls: 0 hour, except as required by Section 4.1.2 of this report

Largest Combined Story: 41,000 SF

Sommet Blanc, Park City, Utah

21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

Building C: 14,000 SF

TOTAL: 355,000

B = 300 ft

Egress Width:

F-2 & S-2 = 400 ft

• —

Aspen Group USA, LLC PO Box 980022

ASPEN GROUP Park City, Utah 84098

Pool Consultant Cloward H20 2696 N University Ave, Suite 290 Provo, UT 84604 Landscape Architect EPG Design 6949 South High Tech Drive, Suite 100 Midvale, Utah 84047 Specifications Writer Friday Group 88 Mainelli Road Middlebury, VT

Code Consultant Holmes 600 1st Avenue, Suite 200A Seattle, WA 98104

Fire Protection Engineer Jensen Hughes One Research Drive, Suite 305C Westborough, MA 01581

Vertical Transportation Consulatant Lerch Bates 19515 North Creek Parkway, Suite 304 Bothell, WA 98011

<u>Structural Engineer</u> **Magnusson Klemencic Associates** 1301 5th Ave, Suite 3200 Seattle, WA 98101 <u>Lighting Designer</u>

> 1319 SE MLK Blvd, Suite 210 Portland, Oregon 97219

Building Envelope Consultant 2101 N 34th St Seattle, WA 98103

2144 Westlake Ave N, Suite F Seattle, WA 98109

Accessibility Consultant Studio Pacifica

1001 Fourth Ave., Suite 3100 Seattle, WA 98154 principal architect <u>TK, KM</u>

project manager__TM, JB, SL, MD_ drawn by SK, SS, JR, CP, EA, JF, BD job no. 20052 date 05/17/2024

revisions:

CODE SUMMARY - FIRE

1 INTRODUCTION

1.1 Scope This Fire and Life Safety Basis of Design provides an overview of the fire/life safety code compliance approaches that will be implemented and the fire protection systems and features that will be included in the proposed Sommet Blanc development, located in Park City, Utah. The Sommet Blanc development will be

hillside that is part of the Deer Valley ski resort. The intent of this report is to document concepts and approaches included in the design process, as well as key aspects of the passive and active fire and life safety systems as required by the applicable codes and standards. In conceptual terms, this report ultimately describes the interaction of these systems in the context of an overall approach to achieving the level of safety intended by the adopted codes. The primary intent of this document is to coordinate the fire protection approach among all design and design/build disciplines, and to explain the selected design concepts to the authorities having jurisdiction. Details of code compliance are left to the construction documents and the contractors; however, if conflicts occur between this Fire and Life Safety Code Report and the construction documents, this report, as approved by Park City, will take

bound to the north by a new extension of the existing Marsac Avenue. The rest of the development will face the

The Code Summary table of this report outlines the primary code provisions, the Basis of Design highlights the key issues, and the Detailed Requirements summarizes the most important fire/life safety code provisions as they apply to this project.

1.2 Building Description

Code Topic

ire Protection

Systems (UBC

Sommet Blanc is a mixed-use commercial and residential development. There are a total of three towers (Building A, Building B, and Building C), each provided with below grade parking. The development is located on a sloped site. Based on early discussions with Park City, the buildings were not considered as a high-rise development, but due to recent design changes and discussions with the local authorities in Park City, the three towers are now considered a single high-rise building, see Section 3.1. Buildings A and B are connected by the below grade parking, and by a small common lobby area. There will be a bowling and lounge space below the parking levels in Building A. Building C, connected to Building B by a walkway. Key characteristics are summarized as follows:

- Construction: Type I-B
- Building height: Building A/B: approximately 98 feet
- Building C: approximately 98 feet Number of stories: 10 stories above grade, 2 basement levels below grade

ully sprinklered (NFPA 13)

System (NFPA 72)

 Building area: the entire development has an approximate area of 355,000 SF, with the largest story being approximately 41,000 SF (the interconnected Level 2 in Building A, Level 1 in Building B, and Level P1 in Building C).

Summary

Smoke Alarms in R-2 apartments (UBC Portable Fire Extinguishers: Class ABC and

Emergency Voice/Alarm Communication Standpipe Connections: Class I

(assembly) uses including restaurants, lounges and a fitness space, and Group S-2 (parking) Means of egress: Each of the Building A and Building B towers are served by four interior exit stairs, and Building C is served by two interior exit stairs. There are no horizontal exits proposed.

Use: Mixed-use non-separated, incorporating primarily Group R-2 (residential), with Group A

- NFPA 13 compliant automatic fire sprinkler protection throughout. Each of the three towers are proposed to be served by independent fire sprinkler systems.
- Class I automatic wet standpipes Emergency Voice & Alarm Communication (EV/AC) System
- Smokeproof exit enclosures Portable Fire Extinguishers

Key fire protection features:



This section highlights some of the major fire/life safety design criteria of the project and key code issues and

The Sommet Blanc development is located on a sloped site, and the highest occupied level of the development

is located more than 75 feet above the lowest fire department access lane. Due to recent design updates and

discussions with the local authorities of Park City, all of Buildings A, B and C are considered a single high-rise

proposed design solutions that are unusual and/or have the most impact on the fire/life safety approach of

Figure 1 - Building section

- 1.3 Project team
- Client: White Summit Development I, LLC Design Architect: Olson Kundig Architect of Record: Olson Kundig
- Mechanical Engineer: WSP
- Electrical Engineer: O-LLC Lighting Design Structural Engineer: MKA Code Consultant: Holmes

BASIS OF DESIGN / KEY ISSUES

3.1 High-Rise Requirements

the project.

1.4 Building and Fire Codes for the Project

NFPA 13: Installation of Sprinkler Systems - 2016 Edition

NFPA 72: National Fire Alarm Code - 2019 Edition

NFPA 14: Installation of Standpipe and Hose Systems - 2016 Edition

NFPA 80: Fire Doors and Other Opening Protectives - 2016 Edition

NFPA 20: Installation of Stationary Pumps for Fire Protection – 2016 Edition

and Fire Codes.

limited to:

The Park City Building Department, and the Park City Fire Department are the authorities having jurisdiction

amendments. The 2018 Utah Building and Fire Codes are amended versions of the 2018 International Building

National Fire Protection Association (NFPA) Standards, as referenced by the above Codes, include, but are not

NFPA 701: Standard Methods of Fire Tests for Flame-propagation of Textiles and Films - 2016 Edition

NFPA 24: Installation of Private Fire Service Mains and Their Appurtenances, 2016 Edition

(AHJ) for the project. The City has adopted the 2018 edition of the Utah Building and Fire Codes with local

TABLE OF CONTENTS

Sommet Blanc, Park City, Utah 21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

Sommet Blanc, Park City, Utah 21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

A combination of active and passive smake control system will serve the entire building. The primary approach

will be a positive pressurization system for the stairway enclosures. It is understood that the required smoke

The fire alarm system in the buildings is required to incorporate emergency voice alarm/communications

The main fire alarm control panel will be located in the fire command center, where the annunciation of all

The EVACS will allow for zone by zone communication and all call. Each floor will be a separate fire alarm zone.

The length of any zone will not exceed 300 feet in any direction, but the zones may coincide with the automatic

Each floor will constitute a separate occupant notification zone. The occupant notification system of the floors

immediately above and below the fire floor will also activate simultaneously with the fire alarm on the fire floor,

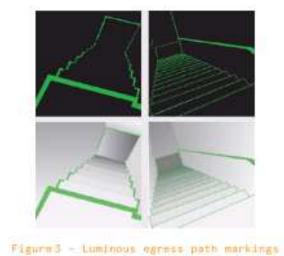
fire sprinkler zones. The fire alarm annunciation will be fully coordinated with the floor levels, stairs and

The following five distinctly different signals will be transmitted to the approved supervising station:

control report and rational analysis as per UBC 909 will be provided by others.

Sommet Blanc, Park City, Utah 21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

Figure 2 - Exit enclosure resoteness measurement 3.1.2 Luminous Egress Path Markings Approved luminous egress path markings delineating the exit path will be provided in interior exit stairways



and exit passageways serving high-rise levels.

3.1.3 Smoke Removal

Figure 3 - Luminous agress path markings

A smoke removal system will be provided to facilitate smoke removal in post-fire operations. The system shall be equipped with either natural or mechanical ventilation for the removal of products of combustion. It is understood that the smoke removal system will be designed by others.

3.1.6 Fire Command Center (FCC) A fire command center is required in each of the two buildings. The fire command center is required to be separated from the remainder of the building by not less than a 1-hour fire barriers. The room is required to be not less than 200 square feet with a minimum dimension of 10 feet. The fire command center is required to be

or as required by the local fire chief.

3.1.4 Stairway Pressurization

3.1.5 EVAC Fire Alarm System

Valve tamper supervisory

initiating devices of the project will be provided.

Water flow alarm

System trouble

Fire alarm

Supervisory

(EVACS) and will be designed to comply with NFPA 72.

The location of and access to the fire command center are required to be approved by the fire chief.

3.1.7 Fire Pumps

One fire pump is required for the entire development, as Buildings A, B and C are now considered a single high-

Radio repeater system.

Emergency voice/alarm communication systems.

One elevator in each bank. The standby power will be manually transferable to any elevator in each

Sommet Blanc, Park City, Utah

checked by JB The secondary power source and its transfer switches inside the building will be protected per Section 4.15.1 of this report, and will be ventilated directly to and from the exterior. Fuel lines supplying a generator set inside a Primary power shutdown capability will be provided in the fire command center. The on-premises fuel supply for the secondary power generator will be sufficient for at least 2-hour full-demand operation, and for at least

> IFC SET 2 OF 3 05/17/2024

LIFE SAFETY REPORT

building. Because the highest occupied level of the building is more than 75 feet above the lowest firedepartment access lane, the building will need to meet the high-rise requirements of the code. It is understood that the Park City Fire Department are open to classifying Buildings A, B and C as different structures as they will be staging their operations adjacent to the Building which has triggered the alarm. The highest occupied level of each of the three Buildings A, B and C from the lowest level of fire department access (adjacent to each applicable building) is as follows: Building A: approximately 85 feet Building B: approximately 92 feet Building C: approximately 98 feet Some of the notable required high-rise systems and features include the following: 3.1.1 Remoteness of interior exit stairways Required interior exit stairways are required to be separated by a distance not less than 30 feet or not less than one-fourth of the length of the maximum overall diagonal dimension of the building or area to be served, whichever is less. The distance needs to be measured in a straight line between the nearest points of the enclosure surrounding the interior exit stairways (see Figure 2). Not fewer than two of the four interior exit stairways of the building are required to comply with this requirement.

Sommet Blanc, Park City, Utah

21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

Class K (commercial kitchens)

Sommet Blanc, Park City, Utah 21020.00_Sammet Blanc_FLS Basis of Design CD_verD.docx

Sommet Blanc, Park City, Utah 21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

Sommet Blanc, Park City, Utah 21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx

rise building.

provided with an independent ventilation or air-conditioning system.

Sommet Blanc, Park City, Utah 21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx Means of egress illumination. Fire sprinkler alarm and supervisory systems. Fire alarm and supervisory systems. Fire detection and supervisory systems. Fire pump controller.

Exit signs.

 Electrically powered fire pumps. Elevator car lighting.

Standby power will supply the following systems at a minimum (60 seconds transfer time):

21020.00_Sommet Blanc_FLS Basis of Design CD_verD.docx