

ONLINE SESSION 03

ARCH 202-04 Hathaway

Friday

3/27/20

TURN ON THE RECORDING!

WEEK 1

3/23

INTRO & SITE CONSTRAINTS

PROGRAMS

WEEK 2

3/30

SYSTEMS *(DRAW A REAL BUILDING)*

WEEK 3

4/6

PIN-UP

FACADE & ENVELOPE

WEEK 4

4/13

VIEWS, DIAGRAMS & DRAWINGS *(PRODUCTION)*

WEEK 5

4/20

PIN-UP

PRESENTATION *(PRODUCTION)*

4/27

REVIEW

WEEK 1

3/23

INTRO

DUE: N/A

IN-CLASS: ZONING

ASSIGN: ARCH. PRECEDENTS

3/25

DESK CRITS

DUE: ARCH. PRECEDENTS, DRAW.

IN-CLASS: LIGHT & AIR

ASSIGN: 3D MASSING MODEL

3/27

GROUP CRIT

DUE: 3D MASSING MODEL

IN-CLASS: SOLAR STUDY

ASSIGN: SITE MODEL

WEEK 2

3/30

DESK CRITS

DUE: PLANS, SECTIONS, 3D

IN-CLASS: STRUCTURE

ASSIGN: STRUCT. PRECEDENTS

4/1

ALL STUDIO MTG.

DUE: STRUCT. PRECEDENTS

IN-CLASS: UNIT PLANS

ASSIGN: PROGRAM PRECEDENTS

4/3

DESK CRITS

DUE: PROGRAM PRECEDENTS

IN-CLASS: SYSTEMS & CIRCULATION

ASSIGN: N/A

WEEK 3

4/6

GROUP PIN-UP

DUE: PLANS, ELEVATIONS, 3D,

SUSTAINABILITY SECTION

ASSIGN: SITE ELEV'S

4/8

DESK CRITS

DUE: SITE ELEV'S

IN-CLASS: SITE & CONTEXT

ASSIGN: FACADE PRECEDENTS

4/10

GROUPS

DUE: FACADE SKETCHES

IN-CLASS: SITE & CONTEXT

ASSIGN: DIAGRAMS

WEEK 4

4/13

DESK CRITS

DUE: SECTIONS, 3D,

TECHNICAL SECTION

IN-CLASS: STORYTELLING

4/15

GROUPS

DUE: 2D DRAWINGS

IN-CLASS: PEER REDLINES

ASSIGN: 3D VIEWS

4/17

DESK CRITS

DUE: 3D VIEWS, DIAGRAMS

IN-CLASS: RENDERING

ASSIGN: N/A

WEEK 5

4/20

PIN-UP MOCK REVIEW

DUE: EVERYTHING (DRAFT)

4/22

DESK CRITS

DUE: PRESENTATION TEXT

IN-CLASS: PRESENTING

4/24

MOCK PRESENT.

DUE: EVERYTHING

IN-CLASS: PRESENTATIONS

4/27

FINAL REVIEW

TODAY

1. GROUP REVIEW: MASSING MODELS
2. GROUPS/ASSIGN: SITE MODEL
3. LECTURE: SOLAR STUDIES
4. IN-CLASS: SOLAR STUDY PREP

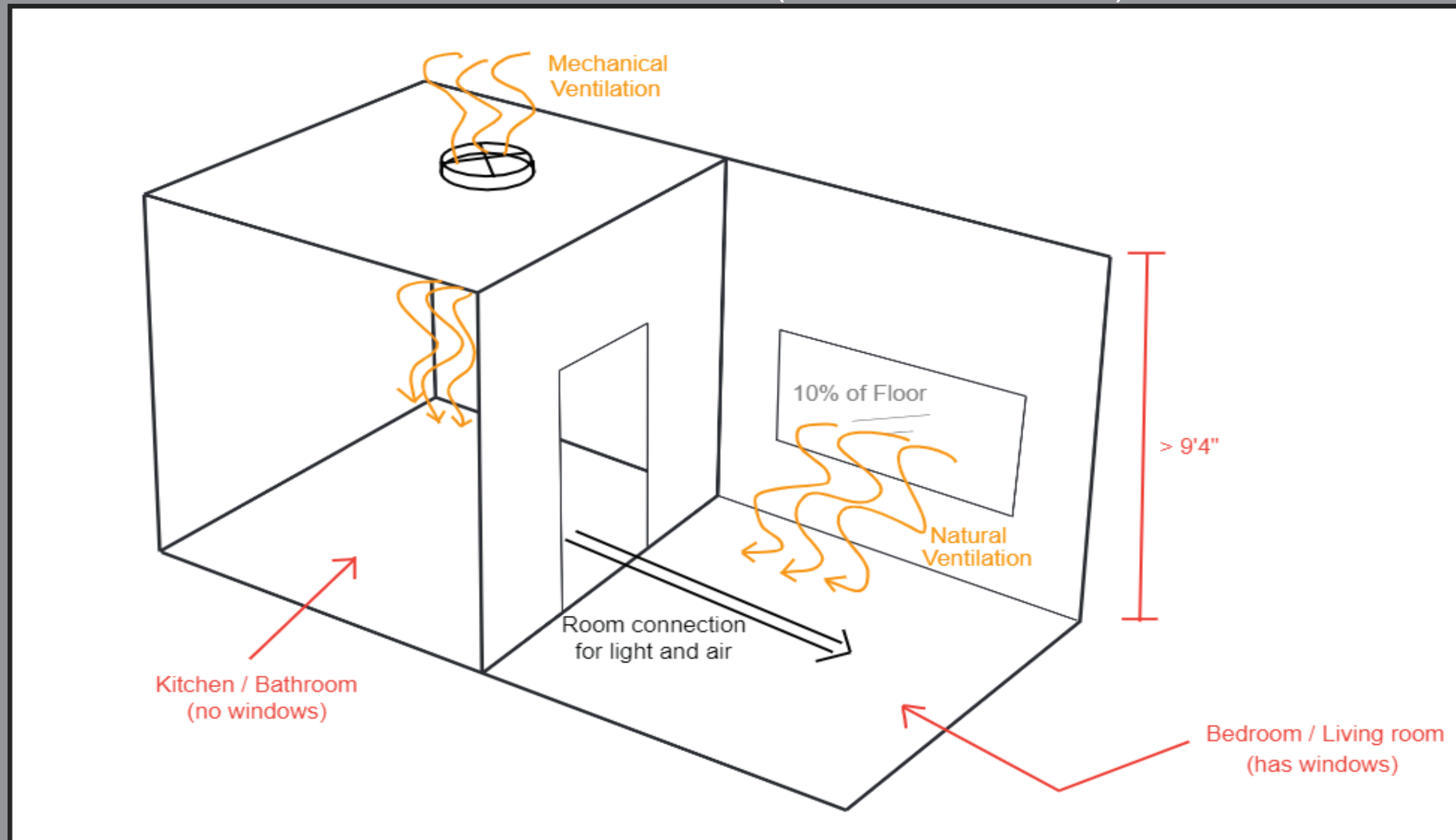
LIGHT & AIR

ALL SPACES REQUIRE VENTILATION (EXCHANGING FRESH AIR FOR “STALE” AIR) AND ILLUMINATION. BUILDING CODE STIPULATES THE AMOUNT OF VENTILATION AND ILLUMINATION REQUIRED FOR DIFFERENT TYPES OF SPACES. FOR OUR PURPOSES WE WILL FOCUS ON NATURAL ILLUMINATION AND VENTILATION THROUGH OPENINGS (WINDOWS AND DOORS) IN THE EXTERIOR WALLS.

CODE ALSO SETS REQUIREMENTS FOR THE WINDOWS AND DOORS IN EXTERIOR WALLS TO LIMIT THE SPREAD OF FIRE. THE MAIN REQUIREMENTS ARE FOR THE WALLS THEMSELVES BUT FOR OUR STUDIO WE’LL FOCUS ON THE OPENINGS.

LIGHT & AIR

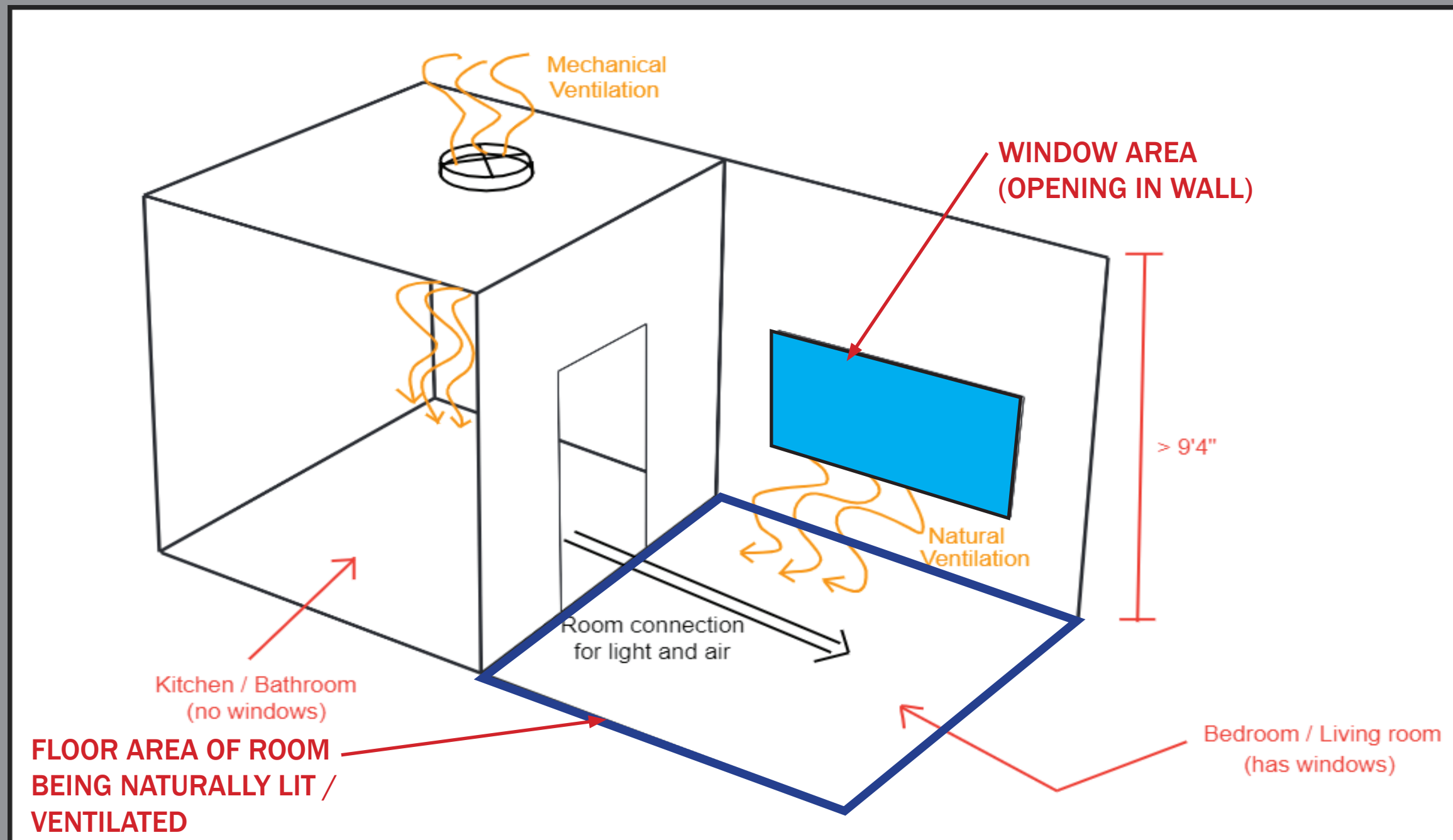
HABITABLE SPACES (FIRST ATTEMPT)



HABITABLE SPACES (LIVING, DINING, AND BEDROOMS) REQUIRE NATURAL LIGHT AND NATURAL VENTILATION (DIRECT FRESH AIR THROUGH AN OPERABLE OPENING). OTHER SPACES (LIKE KITCHENS AND BATHS) MAY BE MECHANICALLY VENTILATED.

LIGHT & AIR

HABITABLE SPACES



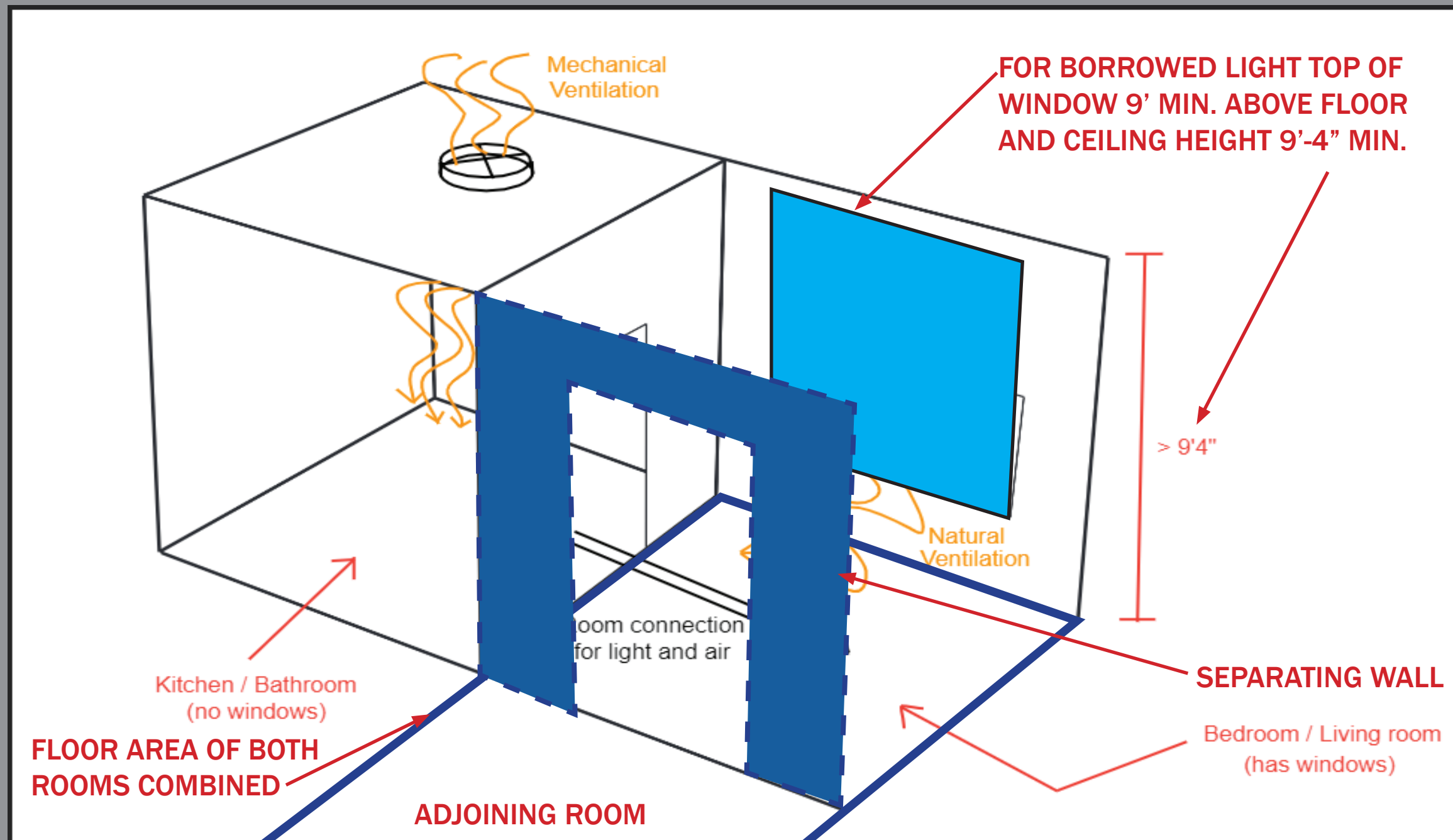
HABITABLE SPACES (LIVING, DINING, AND BEDROOMS)

WINDOW AREA (S.F.) \geq 8% OF FLOOR AREA OF ROOM (S.F.) FOR NATURAL LIGHT

OPERABLE WINDOW AREA (S.F.) \geq 4% OF FLOOR AREA OF ROOM (S.F.) FOR NATURAL VENTILATION

LIGHT & AIR

ADJOINING & REMOTE ROOMS

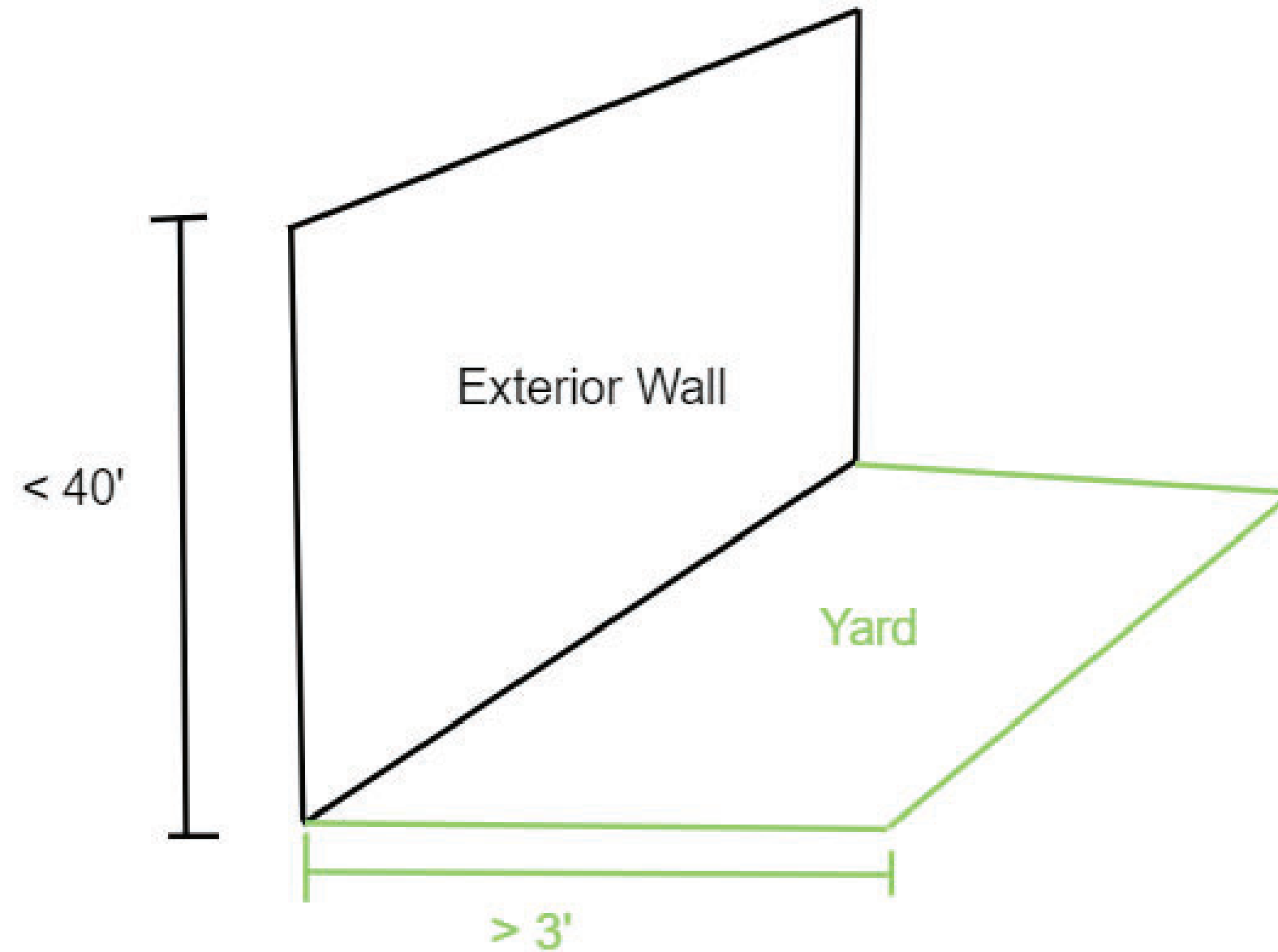


WINDOW AREA (S.F.) \geq 8%
OF COMBINED FLOOR AREA OF
BOTH ROOMS.

REMOTE ROOM BORROWING LIGHT
SEPARATING WALL MUST BE PARALLEL TO
EXTERIOR WALL WITH WINDOW AND 50% OR
MORE OF THE SEPARATING WALL MUST BE OPEN

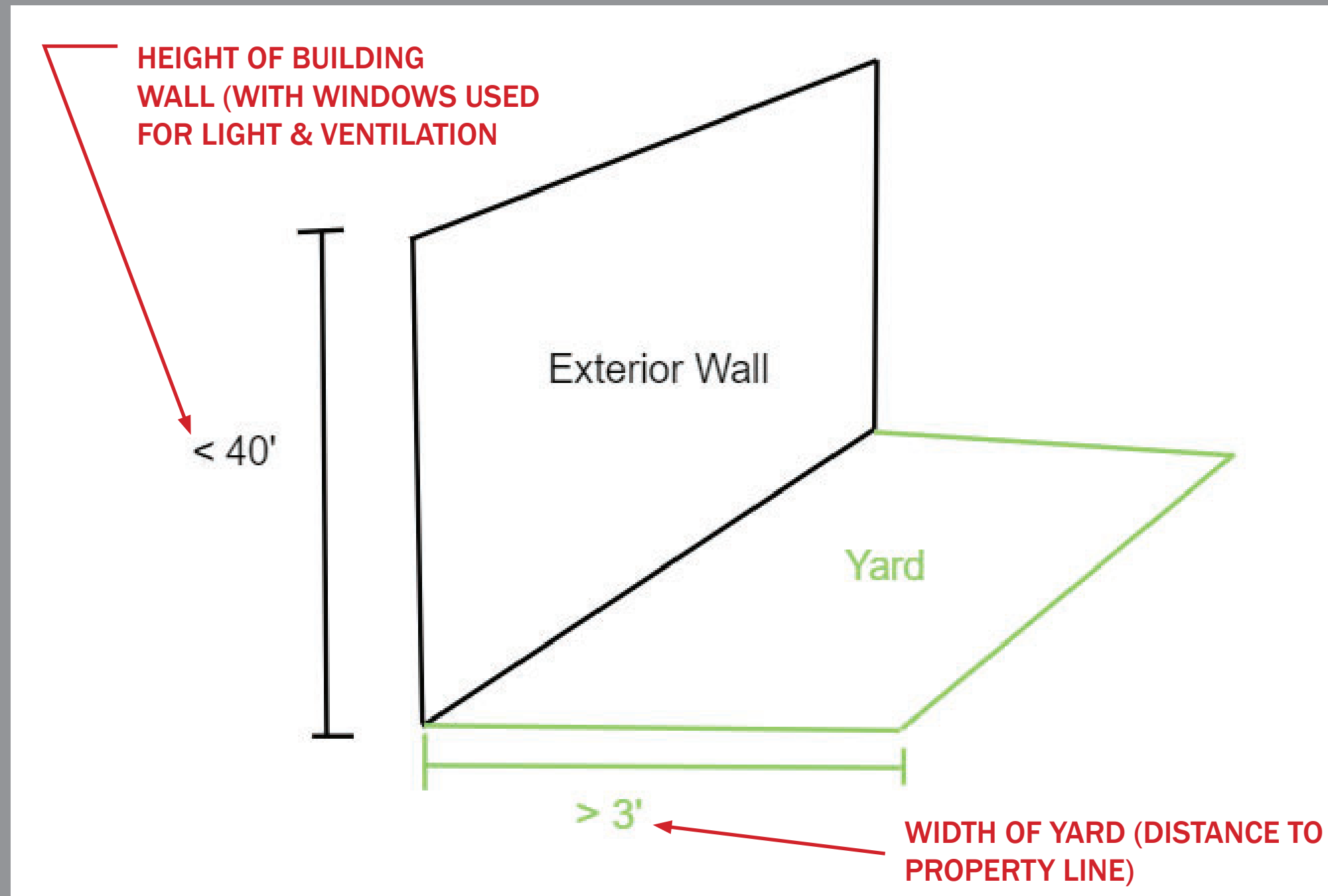
LIGHT & AIR

WHAT'S REQUIRED OUTSIDE THE WINDOWS (FIRST ATTEMPT)



LIGHT & AIR

WHAT'S REQUIRED OUTSIDE THE WINDOWS



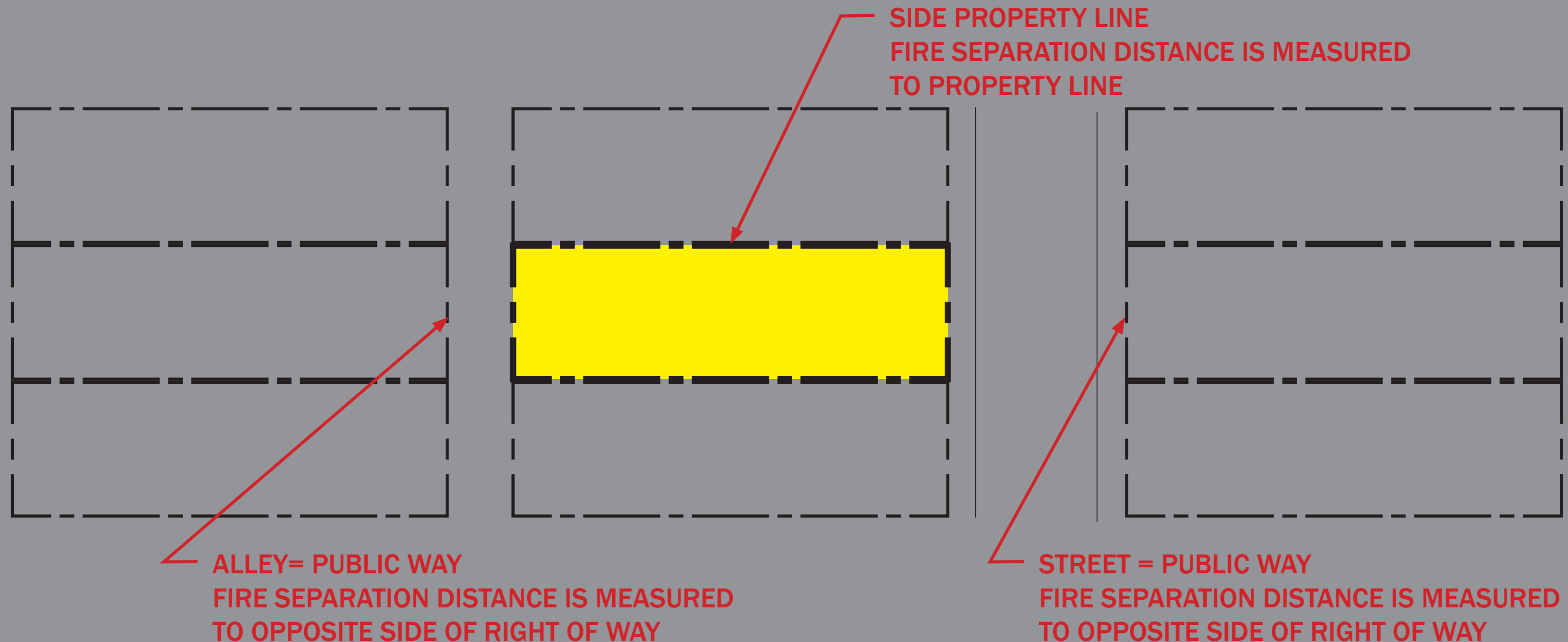
3' MINIMUM YARD WIDTH FOR WALLS UP TO 40' HIGH
(WALL HEIGHT MEASURED ABOVE LOWEST DAYLIT OR VENTILATED LEVEL)
FOR EVERY 1' OF WALL HEIGHT ABOVE 40' ADDITIONAL 2" OF YARD WIDTH REQUIRED

FIRE FIRE SEPARATION DISTANCE

Definitions

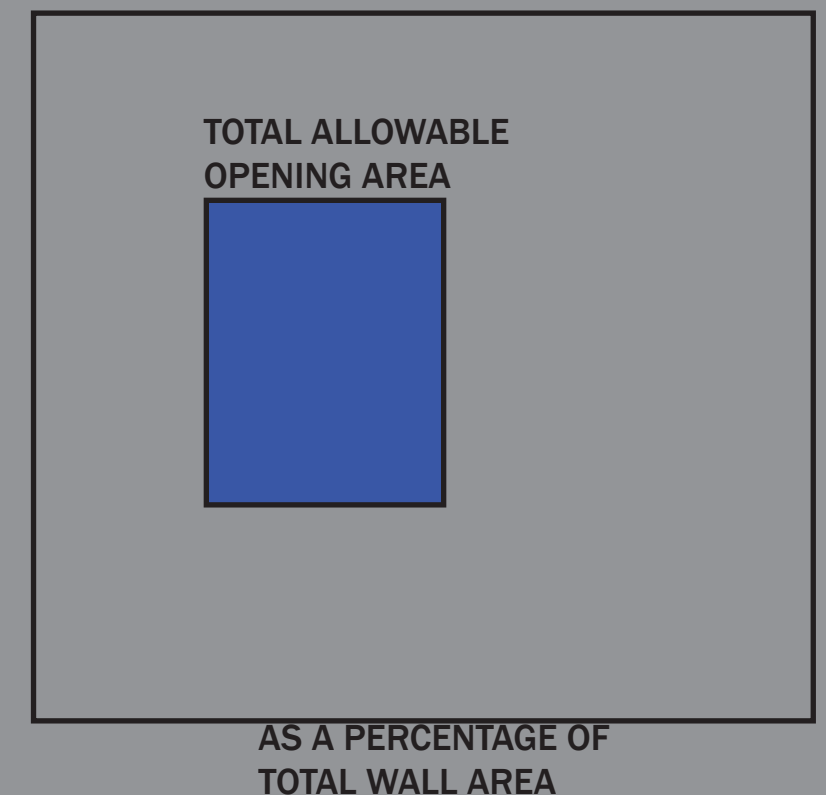
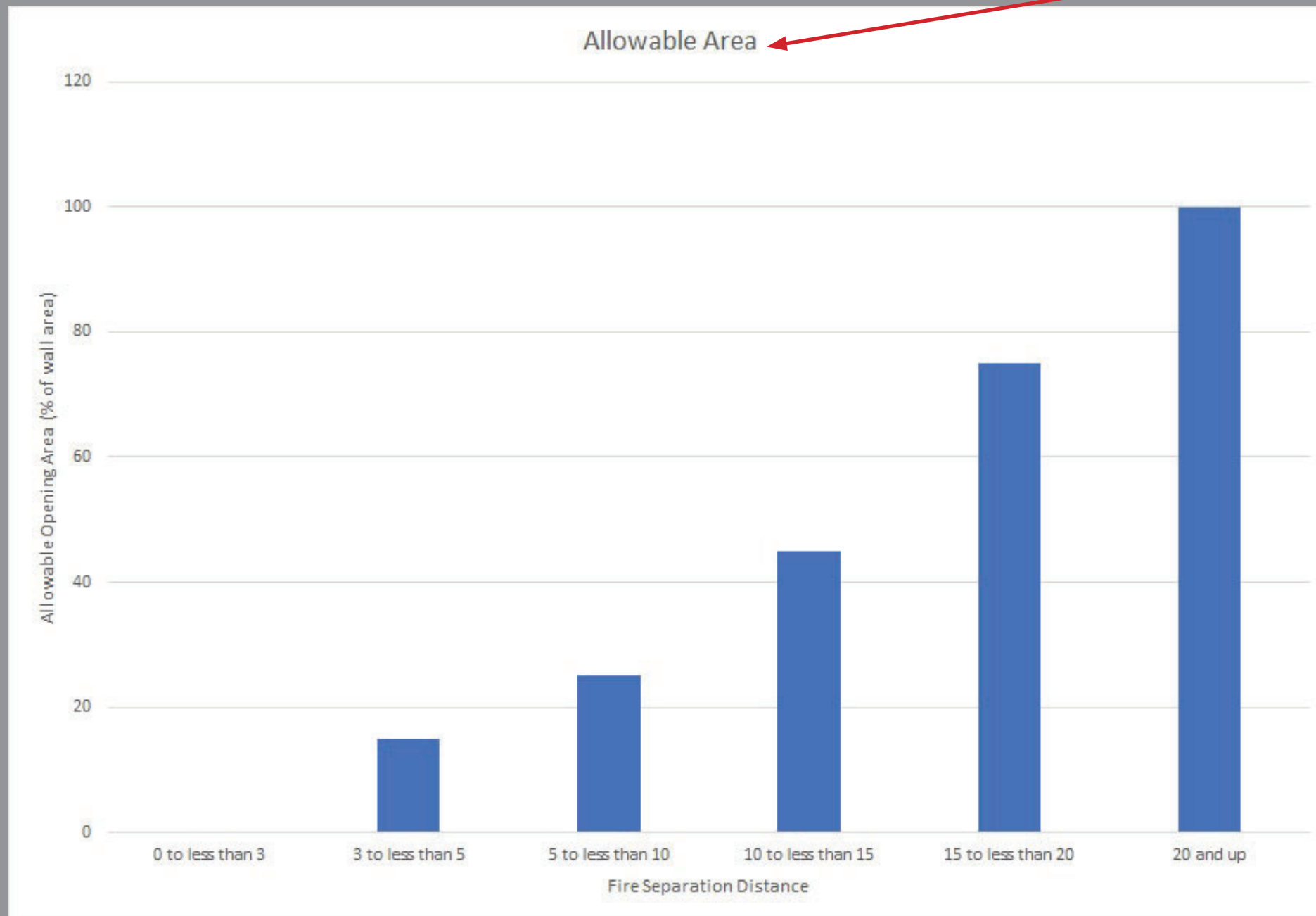
1. Fire Separation Distance : The horizontal distance measured from the building face or element to one of the following:
 - The closest abutting property line.
 - The far boundary of a public way adjoining the lot.
 - An imaginary line between two buildings on the same lot.

2. Allowable opening area: The percentage of the exterior wall area that is an unprotected opening



FIRE MAX. ALLOWED OPENINGS

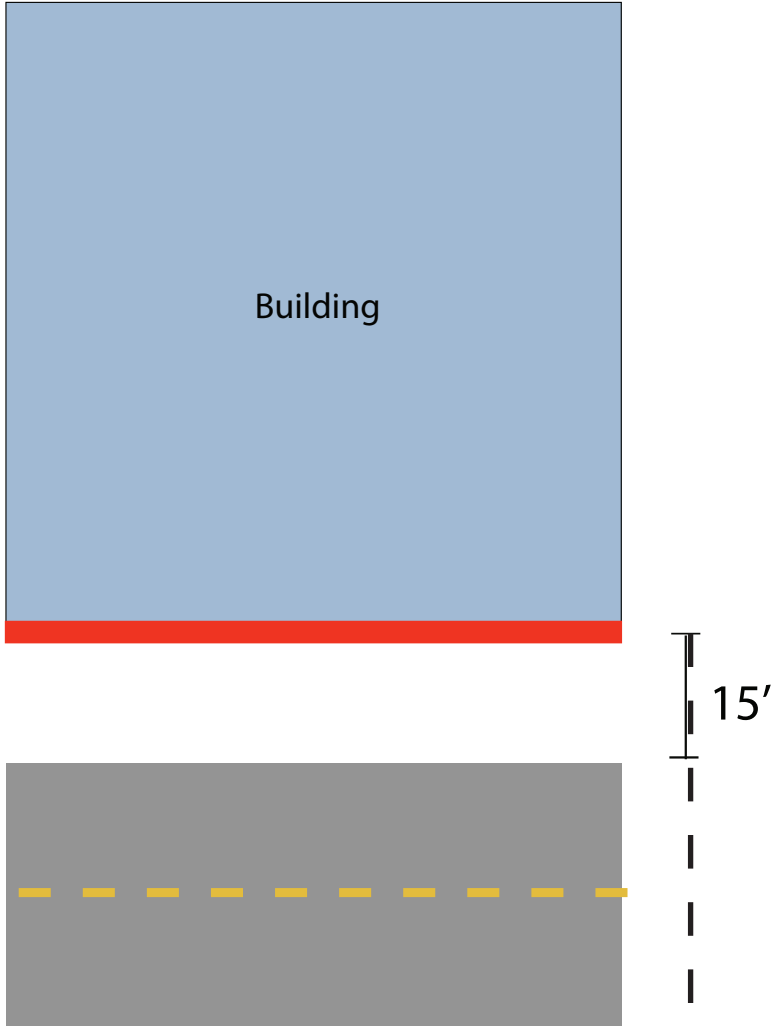
NOTE: THESE VALUES ARE BASED ON THE ASSUMPTIONS WE'VE SET FOR THE STUDIO: THAT THE BUILDING IS SPRINKLERED AND THE OPENINGS ARE UNPROTECTED



THE TOTAL AMOUNT OF WINDOW & DOOR OPENINGS IN A WALL IS BASED ON THE FIRE SEPARATION DISTANCE OF THAT WALL PER THE ABOVE CHART. (THERE ARE WAYS TO EXCEED THIS BY PROTECTING OPENINGS OR USING SPECIAL DOORS OR WINDOWS BUT THIS IS WHAT WE'LL BE USING.)

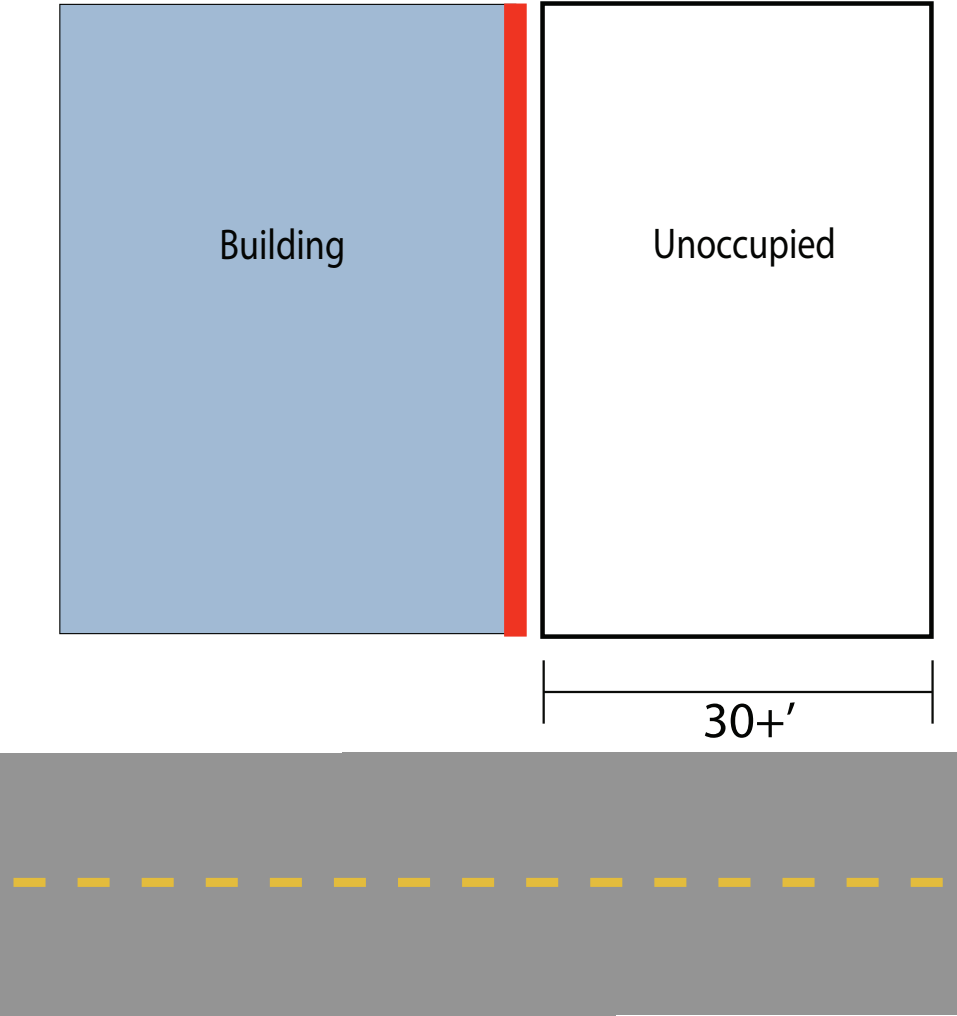
FIRE EXCEPTIONS

Exception 1.1



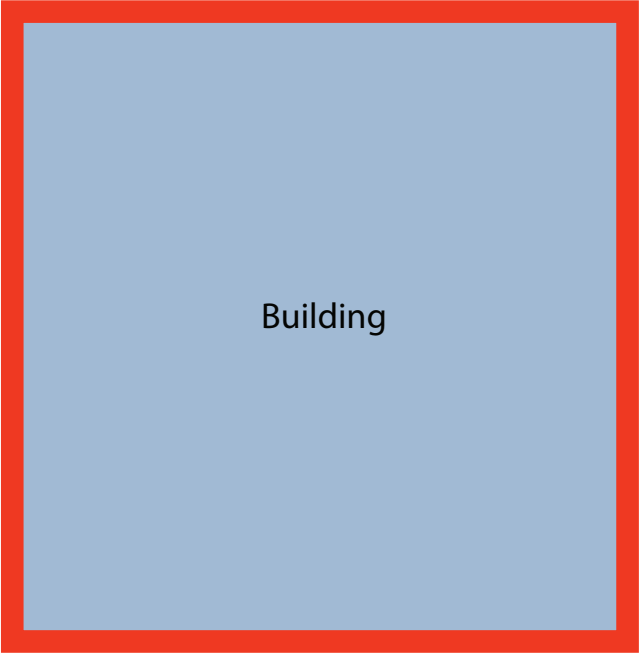
Unlimited unprotected openings permitted in the first story above grade plane where the wall faces a street and has a fire separation distance on 15+ feet.

Exception 1.2



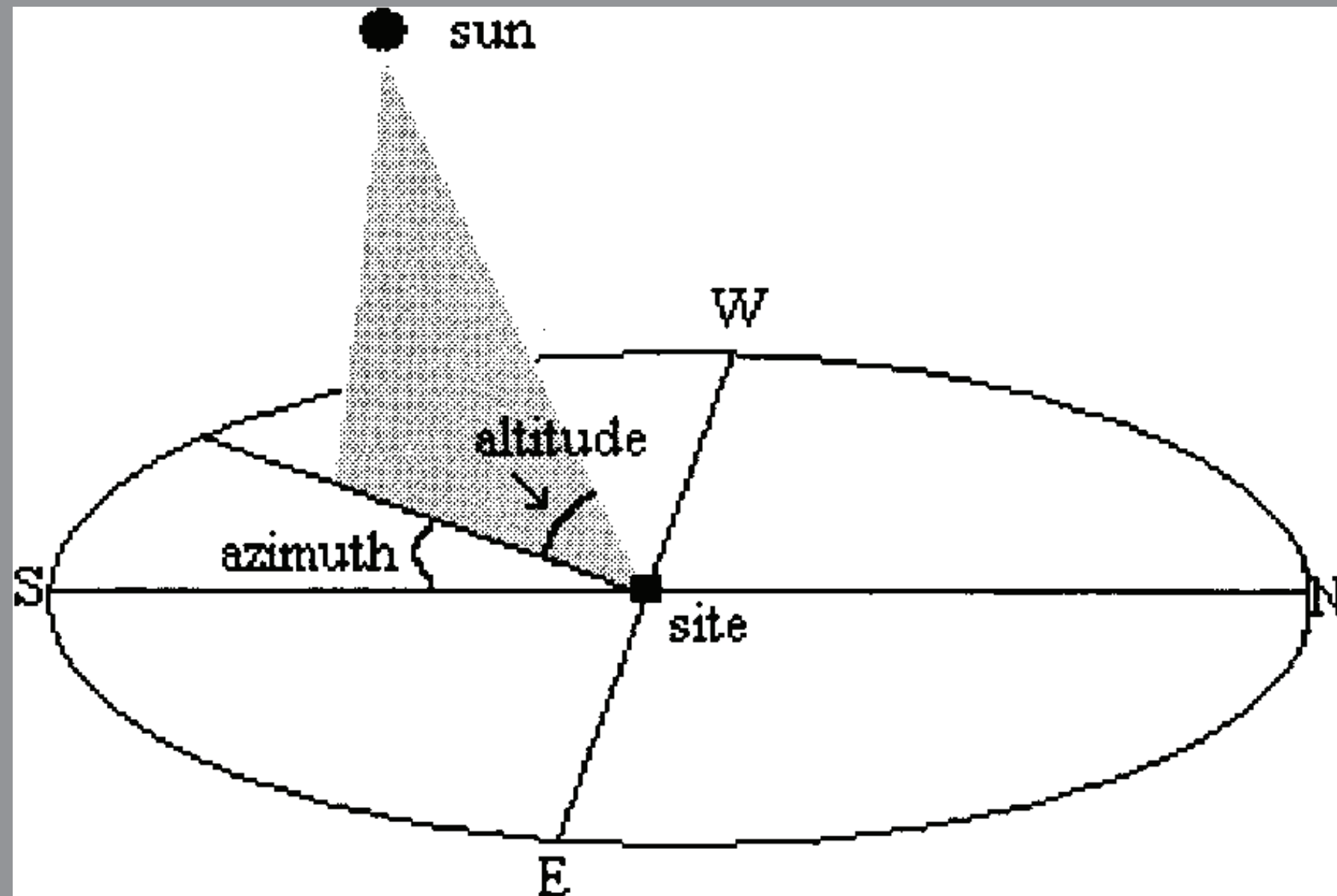
Unlimited unprotected openings permitted in the first story above grade plane where the wall faces an unoccupied space (can be on same lot or dedicated for public use) cannot be less than 30 feet in width and should have access from street

Exception 2



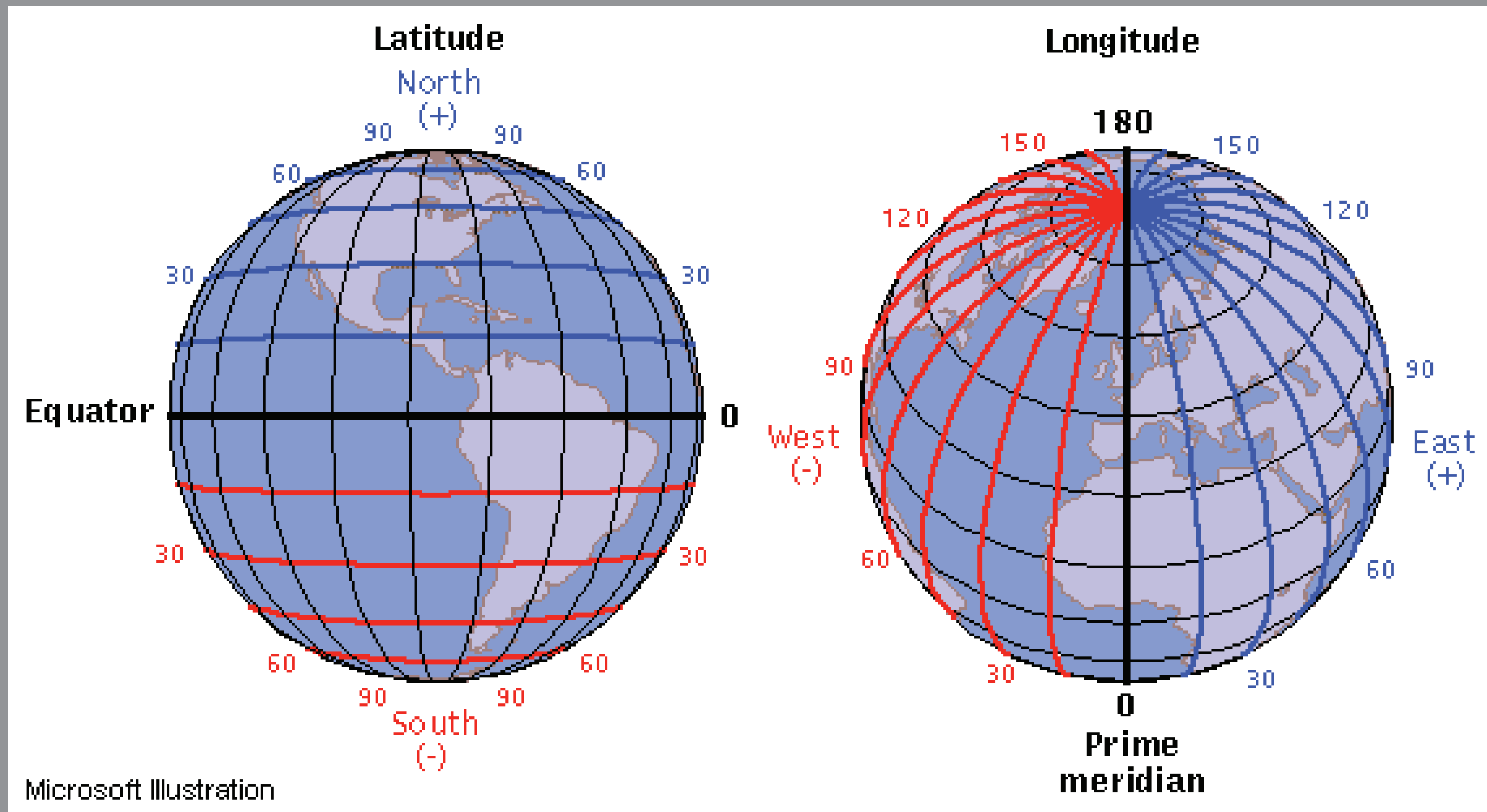
Buildings whose exterior bearing walls, exterior nonbearing walls and exterior primary structural frame are not required to be fire-resistance rated shall be permitted to have unlimited openings.

**15' MIN.
MEASURED
TO OPPOSITE
SIDE OF
RIGHT-OF-WAY**



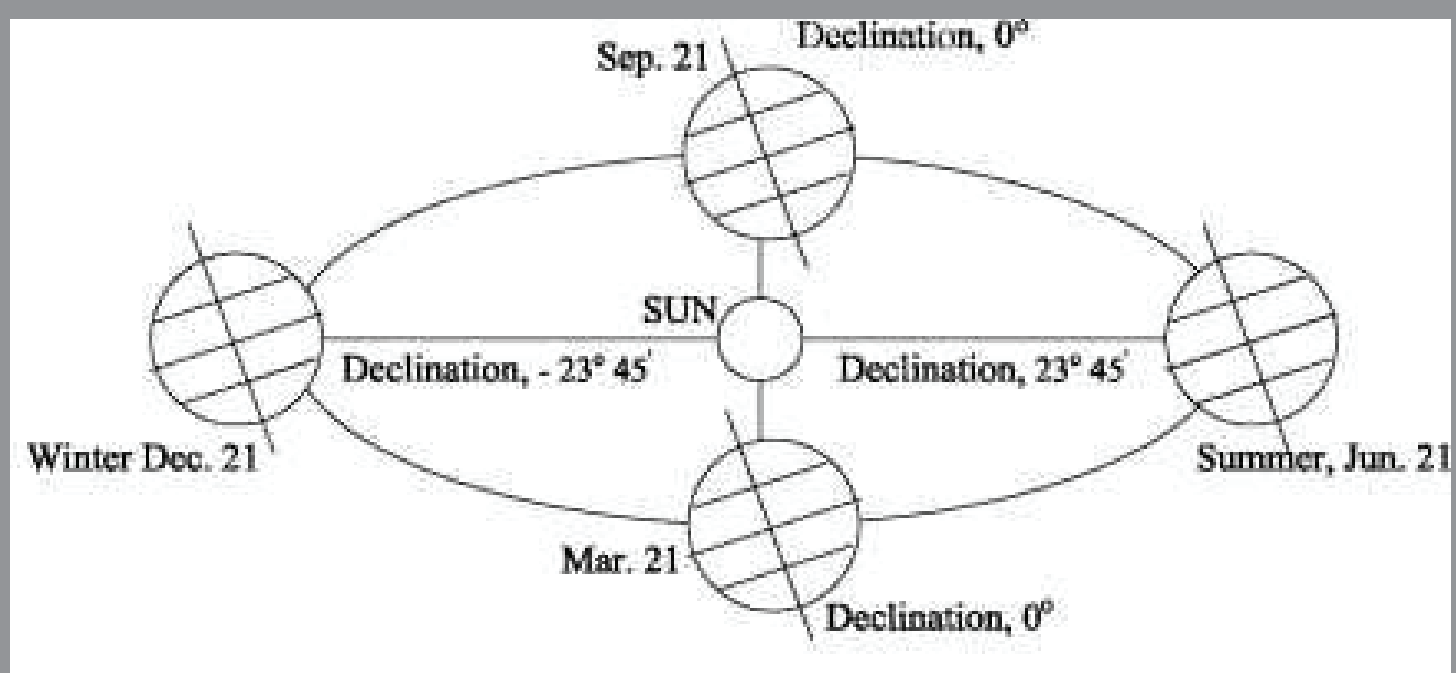
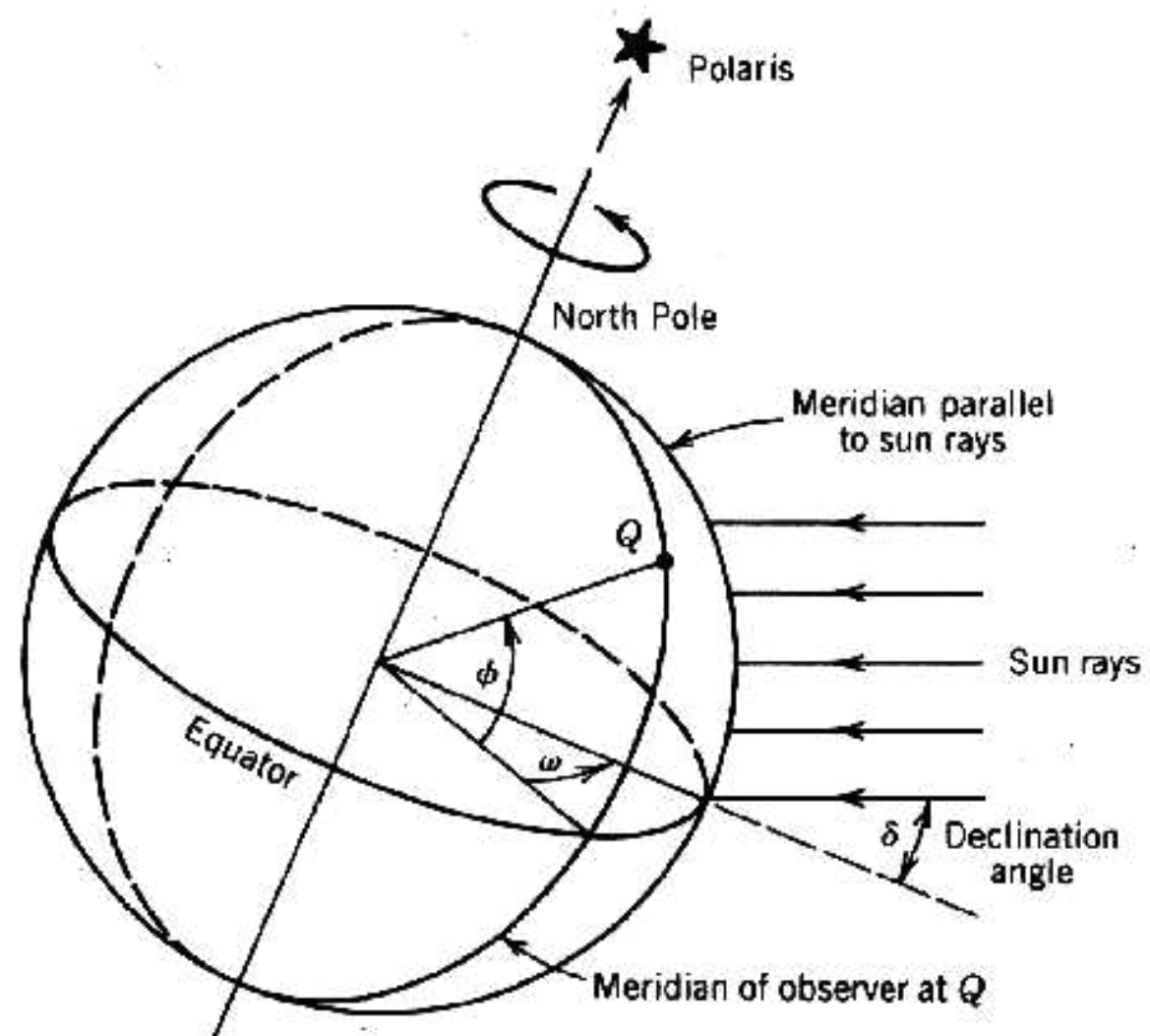
AZIMUTH: ANGLE OF THE SUN RELATIVE TO THE OBSERVER MEASURED IN THE GROUND PLANE FROM CARDINAL NORTH (TYPICAL) OR SOUTH

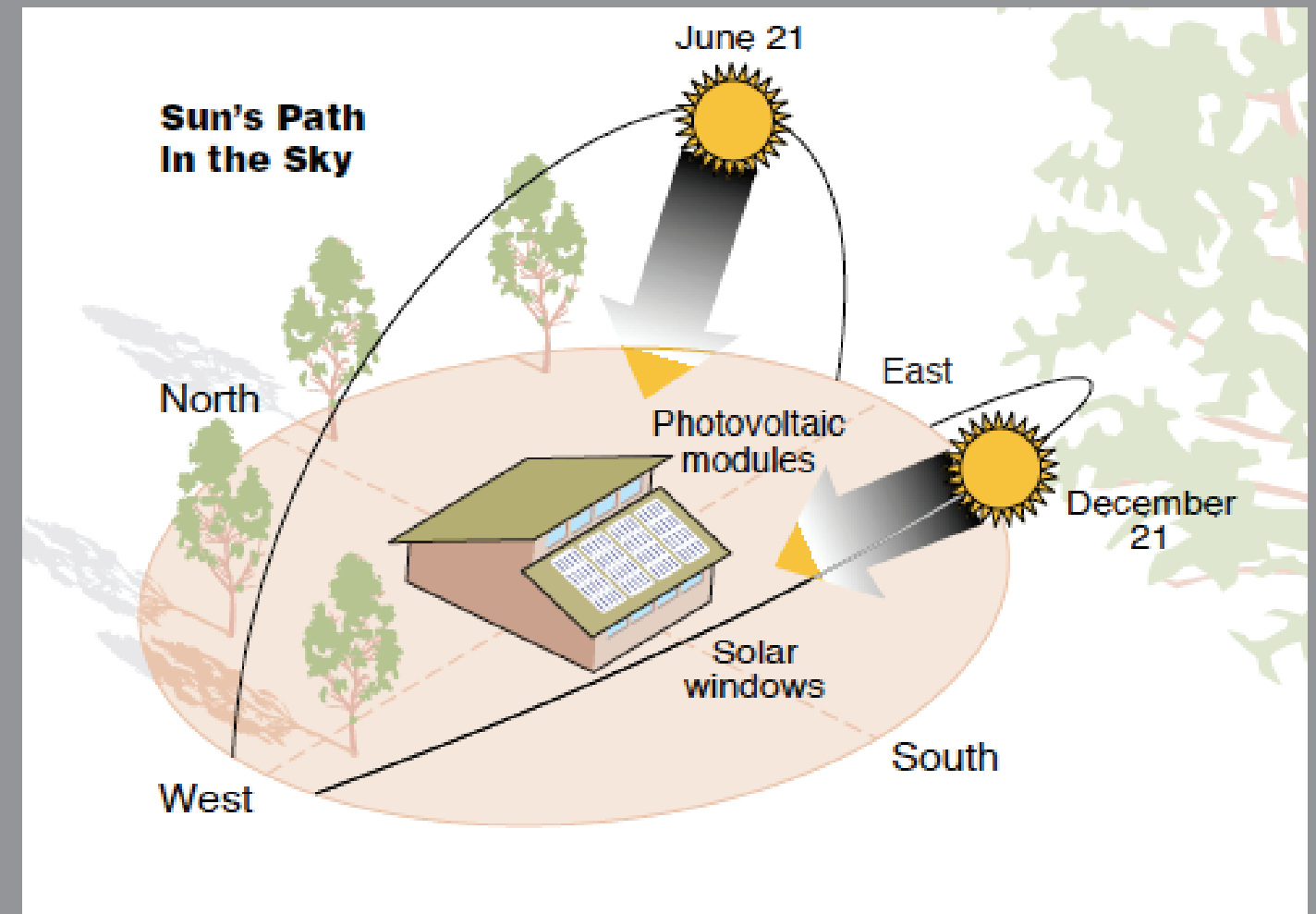
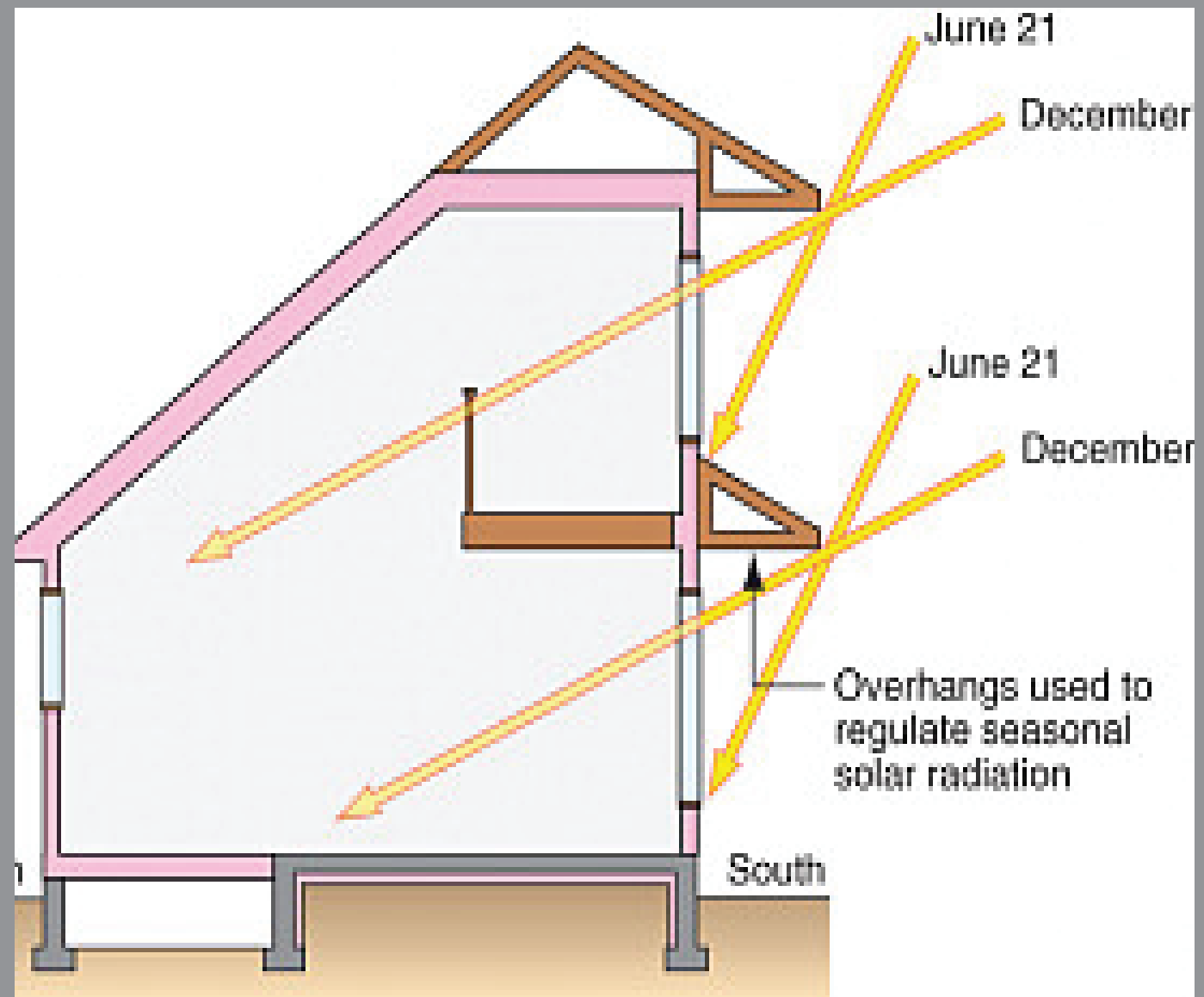
ALTITUDE: ANGLE OF THE SUN RELATIVE TO THE OBSERVER AS MEASURED FROM THE HORIZON (GROUND PLANE)

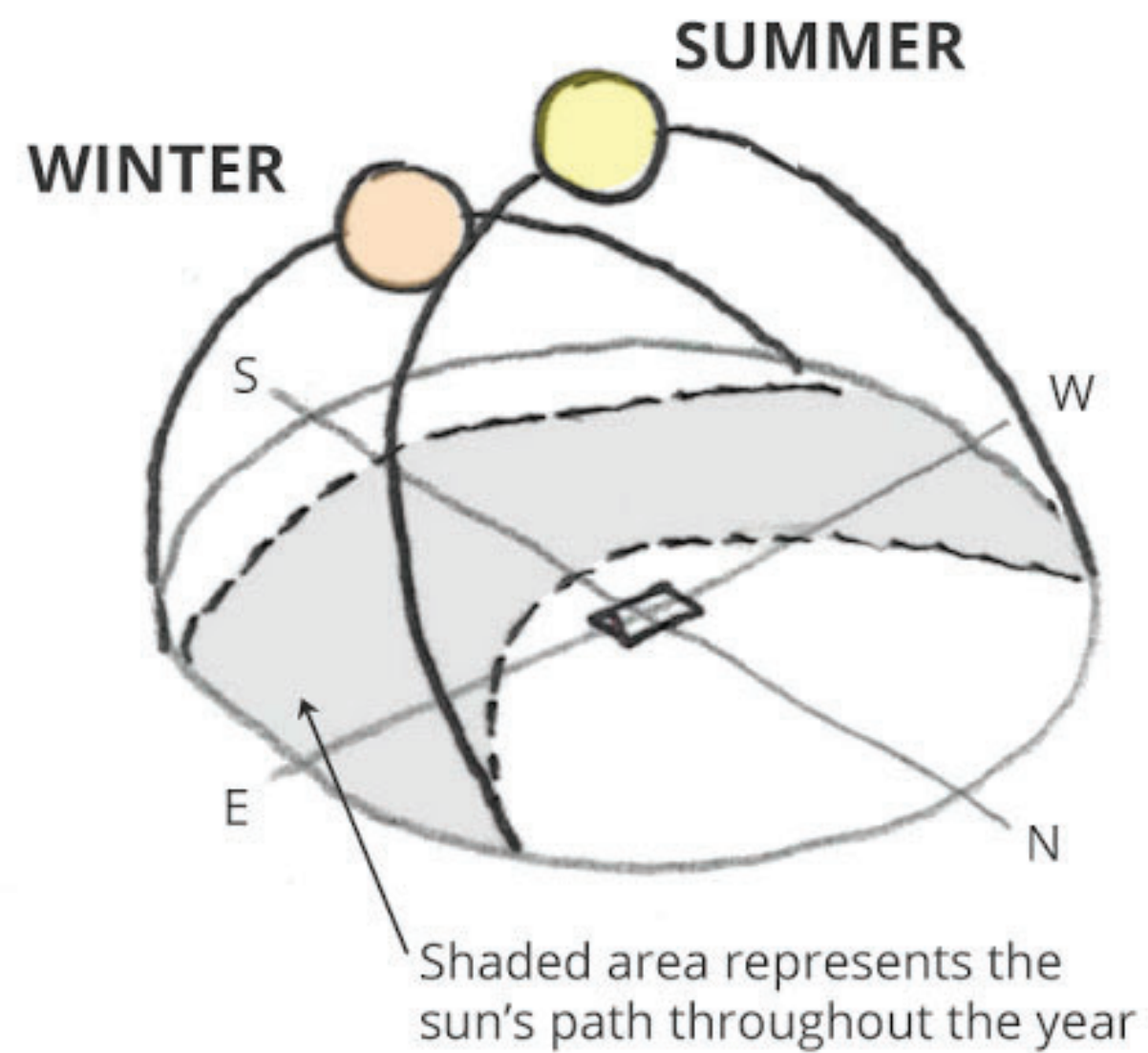
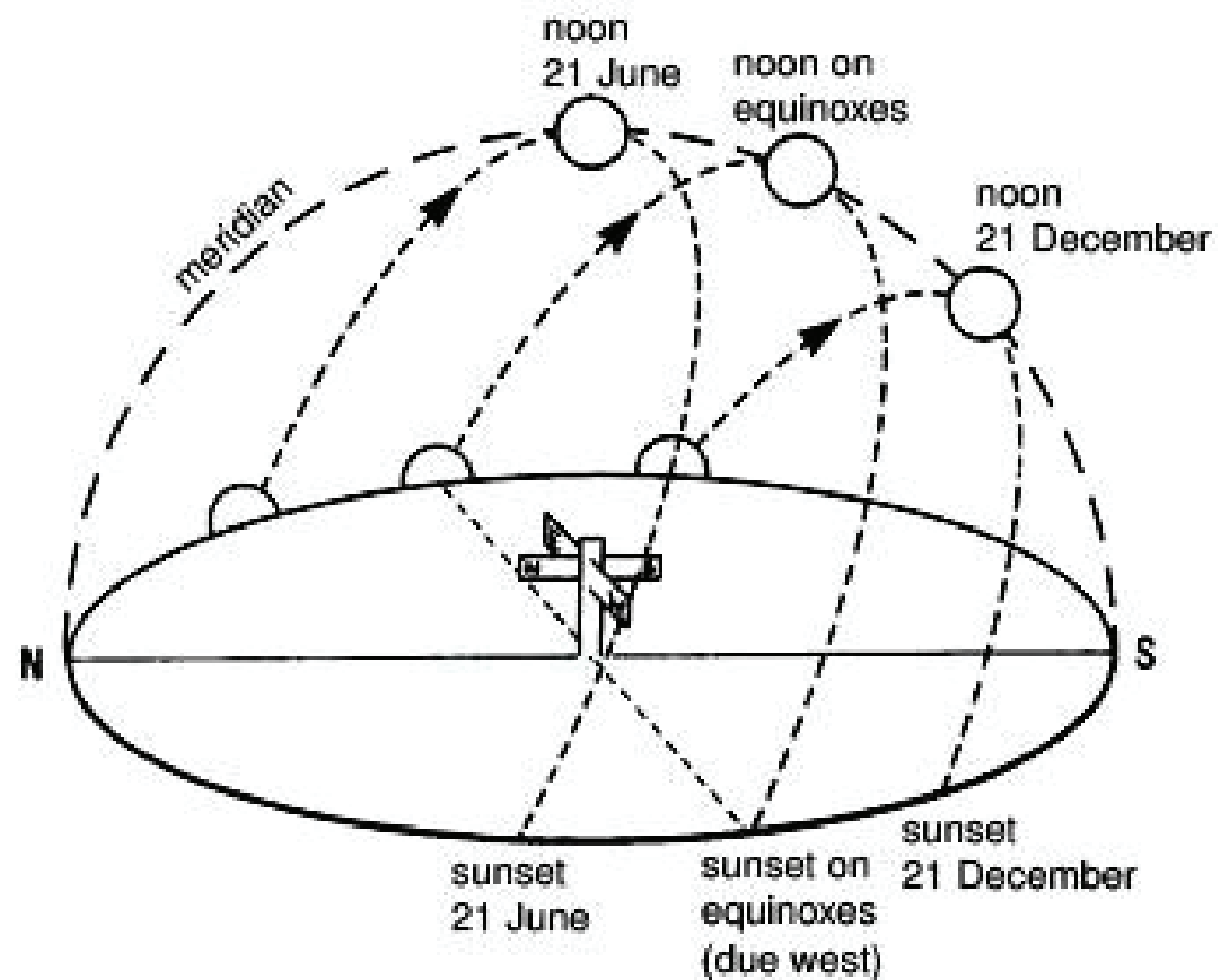


LATITUDE: the angular distance of a place north or south of the earth's equator, usually expressed in degrees and minutes.

LONGITUDE: the angular distance of a place east or west of the meridian at Greenwich, England, usually expressed in degrees and minutes.







name:
lat: 41.8755616
lon: -87.6244212
date: 27/03/2020
time: 12:00 gmt-6
azim.: 158.45°
elev.: 49.15°

SunEarthTools.com

- 21/06/2020
- 27/03/2020
- 21/12/2020

