

BUILDING AREA:

GROSS BUILDING AREA PER 2019 DBC DEFINITION:

THE AREA INCLUDED WITHIN SURROUNDING EXTERIOR WALLS (OR EXTERIOR WALLS AND FIRE WALLS) EXCLUSIVE OF VENT SHAFTS AND COURTS. AREAS OF THE BUILDING NOT PROVIDED WITH SURROUNDING WALLS SHALL BE INCLUDED IN THE BUILDING AREA IF SUCH AREAS ARE INCLUDED WITHIN THE HORIZONTAL PROJECTION OF THE ROOF OR FLOOR ABOVE. (CHAPTER 2, SECTION 202)

BASEMENT	8100 SF
FIRST FLOOR	7600 SF
SECOND FLOOR	7400 SF
THIRD - TWELFTH FLOOR	7100 SF
OCCUPIED ROOF	7100 SF (NOT INCLUDED IN BUILDING AREA PER 503.1.4)
TOTAL GROSS AREA:	95,100 SF

OCCUPANTS:

CALCULATIONS PER 2021 MBC, CHAPTER 10, TABLE 1004.5

INCREASED OCCUPANT LOAD: THE OCCUPANT LOAD PERMITTED IN ANY BUILDING, OR PORTION THEREOF, IS PERMITTED TO BE INCREASED FROM THAT NUMBER ESTABLISHED FOR THE OCCUPANCIES IN TABLE 1004.5, PROVIDED THAT ALL OTHER REQUIREMENT OF THE CODE ARE MET BASED ON SUCH MODIFIED NUMBER AND THE OCCUPANT LOAD DOES NOT EXCEED 1) ONE PERSON PER 7 SQUARE FEET OF OCCUPIABLE FLOOR SPACE, WHERE REQUIRED BY THE BUILDING OFFICIAL, AN APPROVED AISLE, SEATING OR FIXED EQUIPMENT DIAGRAM SUBSTANTIATING ANY INCREASE IN OCCUPANT LOAD SHALL BE SUBMITTED; WHERE REQUIRED BY THE BUILDING OFFICIAL, SUCH DIAGRAM SHALL BE POSTED. (CHAPTER 10, SECTION 1004.5)

OCCUPANT LOAD FACTOR:		AREA:	LOAD FACTOR:	OCCUPANCY LOAD:
BASEMENT:		# SF	NET	#
ASSEMBLY:		# SF	GROSS	#
BUSINESS:		# SF		#
TOTAL BASEMENT:		# SF		#
FIRST FLOOR:		# SF	NET	#
ASSEMBLY:		# SF	GROSS	#
BUSINESS:		# SF		#
TOTAL FIRST FLOOR:		# SF		#
SECOND FLOOR:		# SF	NET	#
ASSEMBLY:		# SF	GROSS	#
BUSINESS:		# SF		#
TOTAL SECOND FLOOR:		# SF		#
THIRD - ELEVENTH FLOOR:		# SF	NET	#
ASSEMBLY:		# SF	GROSS	#
BUSINESS:		# SF		#
TOTAL TYP. FLOOR:		# SF		#
TWELFTH FLOOR:		# SF	NET	#
ASSEMBLY:		# SF	GROSS	#
BUSINESS:		# SF		#
TOTAL TWELFTH FLOOR:		# SF		#
OCCUPIED ROOF:		# SF	NET	#
ASSEMBLY:		# SF	GROSS	#
BUSINESS:		# SF		#
TOTAL ROOF:		# SF		#
TOTAL OCCUPANCY:		# SF		#
ASSEMBLY:		# SF		#
BUSINESS:		# SF		#
TOTAL:		# SF		#

EXITING:

CALCULATIONS PER 2021 MBC, CHAPTER 10

DESIGN OCCUPANT LOAD (SECTION 1004): REFER TO A-012, A-013, A-014, AND A-015

QUANTITY OF EXITS REQUIRED (SECTION 1006): 2

QUANTITY OF ACCESSIBLE EXITS REQUIRED (SECTION 1009): 2

ARRANGEMENT OF EXITS (SECTION 1007.1): NOT LESS THAN 1/2 OVERALL DIAGONAL DISTANCE.

MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE WITH SPRINKLER SYSTEM IS LIMITED TO:

ASSEMBLY (FIXED SEATING): 30 FEET (SECTION 1030.8)

BUSINESS: 100 FEET (TABLE 1006.2.1)

R-1 RESIDENTIAL: 75 FEET (TABLE 1006.2.1)

MAXIMUM EXIT ACCESS TRAVEL DISTANCE WITH SPRINKLER SYSTEM IS LIMITED TO:

ASSEMBLY (TABLE 1017.2)

BUSINESS: 300 FEET (TABLE 1017.2)

R-1 RESIDENTIAL: 250 FEET (TABLE 1017.2)

MINIMUM STAIR, CORRIDOR, AND DOOR WIDTH CALCULATIONS (1005.3):

MINIMUM STAIR WIDTH REQUIREMENTS: 44" PER SECTION 1011.2, 36" IF < 50 OCC

MINIMUM CORRIDOR WIDTH REQUIREMENTS: 44" PER TABLE 1020.3, 36" IF < 50 OCC

MINIMUM DOOR CLEAR WIDTH (1010.1.3): 32"

BASEMENT: OCCUPANT LOAD / # OF EXITS: CAPACITY FACTOR: CAPACITY: WIDTH: REQUIRED WIDTH:

BASEMENT:		0.3	#	#	#
ASSEMBLY:		0.2	#	#	#
BUSINESS:		0.2	#	#	#
TOTAL BASEMENT:		0.2	#	#	#

FIRST FLOOR:		0.3	#	#	#
ASSEMBLY:		0.2	#	#	#
BUSINESS:		0.2	#	#	#
TOTAL FIRST FLOOR:		0.2	#	#	#

SECOND FLOOR:		0.3	#	#	#
ASSEMBLY:		0.2	#	#	#
BUSINESS:		0.2	#	#	#
TOTAL SECOND FLOOR:		0.2	#	#	#

THIRD - ELEVENTH FLOOR:		0.3	#	#	#
ASSEMBLY:		0.2	#	#	#
BUSINESS:		0.2	#	#	#
TOTAL TYP. FLOOR:		0.2	#	#	#

TWELFTH FLOOR:		0.3	#	#	#
ASSEMBLY:		0.2	#	#	#
BUSINESS:		0.2	#	#	#
TOTAL TWELFTH FLOOR:		0.2	#	#	#

OCCUPIED ROOF:		0.3	#	#	#
ASSEMBLY:		0.2	#	#	#
BUSINESS:		0.2	#	#	#
TOTAL ROOF:		0.2	#	#	#

PER ASHRAE 90.1 A VESTIBULE IS NOT REQUIRED WHEN OPENING INTO SPACES LESS THAN 3,000 SF.

PLUMBING FIXTURE CALCULATIONS:

CALCULATIONS PER 2021 MPC, CHAPTER 4, TABLE 403.1

MINIMUM REQUIRED PLUMBING FIXTURES PER GENDER

A-2 ASSEMBLY: # OCC / 2 = # OCC MALES (M) + # OCC FEMALES (W)

B BUSINESS: # OCC / 2 = # OCC MALES (M) + # OCC FEMALES (W)

R-1 RESIDENTIAL: # OCC / 2 = # OCC MALES (M) + # OCC FEMALES (W)

TABLE REQUIREMENTS: WATER CLOSETS LAVATORIES DRINKING FOUNTAINS

A-2 ASSEMBLY: 1 PER 75 OCC REQD 1 PER 200 OCC REQD 1 PER 500 OCC REQD

OCC M * [1/75] = # OCC M * [1/200] = # OCC M * [1/500] =

WOMEN (W) 1 PER 75 OCC REQD 1 PER 200 OCC REQD 1 PER 500 OCC REQD

OCC M * [1/75] = # OCC M * [1/200] = # OCC M * [1/500] =

MEN (M) 1 PER 75 OCC REQD (FIRST 50 OCC) 1 PER 40 OCC REQD (FIRST 80 OCC) 1 PER 100 REQD

OCC M * [1/25] * [X - 50] * [1/50] = # OCC M * [1/40] * [X - 80] * [1/80] = # OCC M * [1/100] =

WOMEN (W) 1 PER 25 OCC REQD (FIRST 50 OCC) 1 PER 40 OCC REQD (FIRST 80 OCC) 1 PER 100 REQD

OCC M * [1/25] * [X - 50] * [1/50] = # OCC M * [1/40] * [X - 80] * [1/80] = # OCC M * [1/100] =

1 PER SLEEPING UNIT REQD 1 PER SLEEPING UNIT REQD -/-

1 * # UNITS = 1 * # UNITS = -/-

WOMEN (W) -/- -/- -/-

TOTAL PROVIDED MEN (M) # # #

WOMEN (W) F # # #

TOTAL # # #

APPLICABLE CODES:

FIRE - CONTINUED

DCC 2019 (DETROIT CITY CODE 2019 PART II & VI)
DBC 2019 (DETROIT CITY BUILDING CODE 2019)
DRC 2019 (DETROIT CITY REHABILITATION CODE 2019)
MRC 2021 (MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS 2021)
MBC 2021 (MICHIGAN BUILDING CODE 2021)

MECHANICAL

DCC 2019 (DETROIT CITY CODE PART IV, CHAPTER 8, ARTICLE IV)
DMC 2019 (DETROIT CITY MECHANICAL CODE 2019)
MPC 2021 (MICHIGAN MECHANICAL CODE 2021)

ELECTRICAL

DCC 2019 (DETROIT CITY CODE PART IV, CHAPTER 8, ARTICLE III)
MEC 2023 (MICHIGAN ELECTRIC CODE 2023, PART 8)
NEC 2023 (NATIONAL ELECTRIC CODE 2023)

PLUMBING