



STAFF REPORT

City Council
Meeting Date: 9/24/2019
Staff Report Number: 19-195-CC

Consent Calendar: **Waive the second reading and adopt Ordinance No. 1057 to establish local amendments to the 2019 California Energy Code that require higher levels of building electrification and solar production for newly constructed buildings to reduce greenhouse gas emissions effective January 1, 2020**

Recommendation

Staff recommends that the City Council:

1. Waive the second reading and adopt Ordinance No.1057 to establish local amendments to the 2019 California Energy Code that require higher levels of building electrification and solar production for newly constructed buildings to reduce greenhouse gas emissions effective January 1, 2020; and
2. Accept findings related to local modifications based upon local geographical, topographical, and climatic conditions and cost effectiveness; and
3. Authorize the city manager to submit ordinance submittal package to the California Energy Commission and California Building Standards Commission for its approval as required by law.

Policy Issues

State law requires two City Council actions, a first reading and second reading, to amend or add to a city's municipal code.

Background

Ordinance No. 1057, Attachment A, was first heard by the City Council July 16 and August 27, where it was amended with City Council direction. The ordinance was introduced and approved as written in Attachment A September 10. Attachment B provides the staff report outlining the ordinance development, analysis, and cost effectiveness study results leading to introduction September 10.

Analysis

The ordinance only applies to newly constructed buildings from the ground up, and does not include additions or remodels. Table 1 summarizes the ordinance.

Table 1: Summary of proposed Reach Code requirements/standards

Building type	Requirements/standards
New residential buildings (single family and three stories or less multifamily)	<ol style="list-style-type: none"> 1. Require electric fuel source for space heating, water heating and clothes dryers. 2. Natural gas can still be used for stoves, fireplaces or other appliances if desired. Prewiring for electric appliances is required where natural gas appliances are used.
New nonresidential buildings and high-rise multifamily buildings (three stories and greater)	<ol style="list-style-type: none"> 1. Use electricity as the fuel source for all appliances, including but not limited to heating/cooling appliances, cooking appliances, fireplaces and clothes dryers. Exceptions include: <ul style="list-style-type: none"> ◆ Life science buildings may use natural gas for space heating. ◆ Public agency owned and operated emergency operations centers (such as fire stations and police stations) may use natural gas. ◆ Nonresidential kitchens (such as for-profit restaurants and cafeterias) may appeal to use natural gas stoves. ◆ For all exceptions, natural gas appliance locations must be electrically pre-wired for future electric appliance installation 2. Install a minimum amount of on-site solar based on square footage.

If the ordinance is adopted September 24, staff will submit the ordinance to the California Energy Commission (CEC) and the California Building Standards Commission for approval. The CEC approval can take up to 60 days and afterward staff will submit the proposed Reach Codes to the Building Standards Commission for final approval. The ordinance will be effective January 1, 2020 or following final approval by the Building Standards Commission, whichever is later.

Cost effectiveness studies and utility bill costs

The CEC has established methods and variables to use for determining cost effectiveness for utility bill costs. These include, but are not limited to, costs associated with greenhouse gas emissions and the lost opportunity to recover renewable energy by continuing to invest in natural gas over the life of buildings. The statewide cost effectiveness studies used by Menlo Park were commissioned by power providers, such as PG&E, and are being used by cities to implement Reach Codes.

Staff reaffirms that the statewide cost effectiveness study and methodology has provided sufficient analysis and evidence to determine that the ordinance will be cost effective over the life of the buildings. However, point in time analysis savings is harder to capture as the analysis is based on forecasts of energy costs and uses appliances with varying energy efficiency thresholds. This may or may not increase utility bill costs at specific points in time over a building’s life. Utility costs/savings may affect building owners/occupants differently, but in general costs savings will be realized over the life of the building. In addition, the building owner/occupant has additional methods to choose from to lower utility bills, such as using solar power, choosing an energy provider with lower rates, designing energy efficient buildings, and choosing higher energy efficient appliances.

Impact on City Resources

The ordinance will be administered by the building division. The simplicity of the electrically heated and all-

electric requirement would not require additional resources and may save time in reviewing plans. On-site inspections would require less inspection time due to less or no natural gas infrastructure. In addition, the solar requirement for nonresidential buildings would not require additional resources to review and inspect.

Environmental Review

Pursuant to Title 14 of the California Administrative Code, Section 15061(b)(3) this ordinance is exempt from the requirements of the California Environmental Quality Act ("CEQA") on the grounds that these standards are more stringent than the State energy standards, there are no reasonably foreseeable adverse impacts and there is no possibility that the activity in question may have a significant effect on the environment

Public Notice

Public notification was achieved by posting the agenda, with the agenda items being listed, at least 72 hours prior to the meeting.

Attachments

- A. Ordinance No. 1057
- B. Hyperlink – September 10 staff report: menlopark.org/DocumentCenter/View/22773/F5---20190910-Intro-reach-code-ord---CC?bidId=

Report prepared by:

Joanna Chen, Sustainability Specialist

Rebecca Lucky, Sustainability Manager

Chuck Andrews, Assistant Community Development Director

Cara Silver, Assistant City Attorney

ORDINANCE NO. 1057

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MENLO PARK AMENDING CHAPTER 12.04 [ADOPTION OF CODES] AND CHAPTER 12.16 [ENERGY CODE] OF TITLE 12 [BUILDINGS AND CONSTRUCTION] OF THE MENLO PARK MUNICIPAL CODE TO ADOPT A LOCAL "REACH" CODE

WHEREAS, the City of Menlo Park ("City") wishes to adopt a building code in accordance with law and to use the most updated regulations in the processing of development in the City;

WHEREAS, California Health and Safety Code section 17958 requires that cities adopt building regulations that are substantially the same as those adopted by the California Building Standards Commission and contained in the California Building Standards;

WHEREAS, the California Energy Code is a part of the California Building Standards which implements minimum energy efficiency standards in buildings through mandatory requirements, prescriptive standards, and performances standards;

WHEREAS, California Health and Safety Code Sections 17958.5, 17958.7 and 18941.5 provide that the City may make changes or modifications to the building standards contained in the California Building Standards based upon express findings that such changes or modifications are reasonably necessary because of local climatic, geological or topographical conditions;

WHEREAS, the City Council of the City of Menlo Park finds that each of the amendments, additions and deletions to the California Energy Code contained in this ordinance are reasonably necessary because of local climatic, geological or topographical conditions described in Section 1;

WHEREAS, Public Resources Code Section 25402.1(h)2 and Section 10-106. of the Building Energy Efficiency Standards (Standards) establish a process which allows local adoption of energy standards that are more stringent than the statewide Standards, provided that such local standards are cost effective and the California Energy Commission finds that the standards will require buildings to be designed to consume no more energy than permitted by the California Energy Code;

WHEREAS, the California Codes and Standards Reach Code Program, has determined specific modifications to the 2019 State Energy Code for each climate zone that are cost effective;

WHEREAS, that such modifications will result in designs that consume less energy than they would under the 2019 State Energy Code;

WHEREAS, the City of Menlo Park, through TRC Advanced Energy, has performed an additional cost effectiveness analyses as required by the California Energy Commission for the local amendments to the California Energy Code contained in this ordinance which memo is hereby incorporated by reference;

WHEREAS, based upon these analyses, the City Council of the City of Menlo Park finds that the local amendments to the California Energy Code contained in this ordinance are cost

effective and will require buildings to be designed to consume no more energy than permitted by the California Energy Code;

WHEREAS, because of the City's unique local climatic, geologic and topographic conditions, the City desires to make amendments and additions to the code.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MENLO PARK DOES ORDAIN AS FOLLOWS:

SECTION 1: FINDINGS AND DETERMINATIONS. The following local climatic, conditions justify modifications to the California Building Standards Code.

A. Climatic: The City is located in Climate Zone 3 as established in the 2019 California Energy Code. Climate Zone 3 incorporates mostly coastal communities from Marin County to southern Monterey County including San Francisco. The City experiences precipitation ranging from 13 to 20 inches per year with an average of approximately 15 inches per year. Ninety-five percent of precipitation falls during the months of November through April, leaving a dry period of approximately six months each year. Relative humidity remains moderate most of the time. Temperatures in the summer average around 80 degrees Fahrenheit and in the winter in the mid 50 degrees Fahrenheit. Prevailing winds in the area come from the west with velocities generally in the 12 miles per hour range, gusting from 25 to 35 miles per hour. These climatic conditions along with the greenhouse emissions generated from structures in both the residential and nonresidential sectors requires exceeding the energy standards for building construction established in the 2019 California Buildings Standards Code. The City Council also adopted a Climate Action Plan that has a goal of reducing greenhouse gas emissions 27% below 2005 levels by 2020. In order to achieve and maintain this goal, the City needs to adopt policies and regulations that reduce the use of fossil fuels that contribute to climate change, such as natural gas in buildings, in new development. Human activities, such as burning natural gas to heat buildings, releases greenhouse gases into the atmosphere and causes an overall increase in global average temperature. This causes sea levels to rise, affecting the City's shoreline and infrastructure.

Many new buildings in Menlo Park will be built near the coastline in an area known as the Bayfront Area that is situated on marshlands and former salt ponds. San Francisquito Creek also runs through the City, which creates an increasing potential flooding risk with climate change as a result of human generated greenhouse gas emissions. Menlo Park is vulnerable to sea level rise where new development is proposed in this code cycle. New buildings that are directly vulnerable to sea level rise should avoid generating additional greenhouse gas emissions. The proposed Reach Code would ensure that new buildings use cleaner sources of energy that are greenhouse gas free.

B. Geologic: The City of Menlo Park is subject to earthquake hazard caused by its proximity to San Andreas fault. This fault runs from Hollister, through the Santa Cruz Mountains, epicenter of the 1989 Loma Prieta earthquake, then on up the San Francisco Peninsula, then offshore at Daly City near Mussel Rock. This is the approximate location of the epicenter of the 1906 San Francisco earthquake. The other fault is Hayward Fault. This fault is about 74 mi long, situated mainly along

the western base of the hills on the east side of San Francisco Bay. Both of these faults are considered major Northern California earthquake faults which may experience rupture at any time. Thus, because the City is within a seismic area which includes these earthquake faults, the modifications and changes cited herein are designed to better limit property damage as a result of seismic activity and to establish criteria for repair of damaged properties following a local emergency.

C. Topographic: The City of Menlo Park is contiguous with the San Francisco Bay, resulting in a natural receptor for storm and waste water run-off. Also the City is located in an area that is relatively high liquefaction potential given its proximity to the Bay. The surface condition consists mostly of stiff to dense sandy clay, which is highly plastic and expansive in nature. The aforementioned conditions within the City create hazardous conditions for which departure from California Building Standards Code is warranted

SECTION 2: AMENDMENT OF CODE. Section 12.04.010 of Chapter 12.04 [Adoption of Codes] of Title 12 [Buildings and Construction] is hereby repealed and a new Section 12.04.010 is hereby added to read as follows:

12.04.010 Municipal building code.

The following codes are hereby adopted and by reference are incorporated herein as if set forth in full:

- (1) The 2019 California Administrative Code, published by the International Code Council, as amended in Part 1 of the California Building Standards Code, California Code of Regulations Title 24;
- (2) The 2019 California Building Code based on the International Building Code, 2018 Edition, published by the International Code Council, together with those omissions, amendments, exceptions and additions thereto as amended in Part 2 of the California Building Standards Code, California Code of Regulations Title 24;
- (3) The 2019 California Residential Code based on the International Residential Code, 2018 Edition, published by the International Code Council, together with those omissions, amendments, exceptions and additions thereto as amended in Part 2.5 of the California Building Standards Code, California Code of Regulations Title 24;
- (4) The 2019 California Electrical Code the National Electrical Code, 2017 Edition, published by the National Fire Protection Association, together with those omissions, amendments, exceptions and additions thereto as amended in Part 3 of the California Building Standards Code, California Code of Regulations Title 24;
- (5) The 2019 California Mechanical Code the Uniform Mechanical Code, 2018 Edition, published by the International Association of Plumbing and Mechanical Officials, together with those omissions, amendments, exceptions and additions thereto as amended in Part 4 of the California Building Standards Code, California Code of Regulations Title 24;
- (6) The 2019 California Plumbing code the Uniform Plumbing Code, 2018 Edition, including the Installation Standards thereto, published by the International Association of

Plumbing and Mechanical Officials, together with those omissions, amendments, exceptions and additions thereto as amended in Part 5 of the California Building Standards Code, California Code of Regulations Title 24;

(7) The 2019 California Energy Code, published by the International Code Council, as amended in Part 6 of the California Building Standards Code, California Code of Regulations Title 24;

(8) The 2019 California Historical Building Code, published by the International Code Council, as amended in Part 8 of the California Building Standards Code, California Code of Regulations Title 24;

(9) The 2019 California Existing Building Code based on the 2018 International Existing Building Code Edition, published by the International Code Council, together with those omissions, amendments, exceptions and additions thereto as amended in Part 10 of the California Building Standards Code, California Code of Regulations Title 24 ;

(10) The 2019 California Green Building Standards Code, published by the International Code Council, as amended in Part 11 of the California Building Standards Code, California Code of Regulations Title 24; and

(11) The 2019 California Referenced Standards Code, published by the International Code Council, as amended in Part 12 of the California Building Standards Code, California Code of Regulations Title 24.

A copy of each code is on file in the office of the city clerk. The provisions of this title, including said codes and amendments thereto, shall be known as the building code of the city.

SECTION 3: AMENDMENT OF CODE. Chapter 12.16 [Energy Code] of Title 12 [Buildings and Construction] is hereby repealed and a new Chapter 12.16 is hereby added to read as follows:

SECTION 100.0 – Scope

(e) Sections applicable to particular buildings. TABLE 100.0-A and this subsection list the provisions of Part 6 that are applicable to different types of buildings covered by Section 100.0(a).

1. All buildings. Sections 100.0 through 110.12 apply to all buildings.
EXCEPTION to Section 100.0(e) 1: Spaces or requirements not listed in TABLE 100.0-A.
2. Newly constructed buildings.
 - A. All newly constructed buildings. Sections 110.0 through 110.12 apply to all newly constructed buildings within the scope of Section 100.0(a). In addition, newly constructed buildings shall meet the requirements of Subsections B, C, D or E, as applicable; and shall be an All-Electric Building as defined in Section 100.1(b).

Exception 1: Non-Residential Buildings containing a Scientific Laboratory Building, such area may contain a non-electric Space Conditioning System.

To take advantage of this exception applicant shall provide third party verification that All-Electric space heating requirement is not cost effective and feasible.

Exception 2: All Residential buildings may contain non-electric Cooking Appliances and Fireplaces.

Exception 3: Exemption for public agency owned and operated emergency centers. To take advantage of this exception applicant shall provide third party verification that All-Electric space heating requirement is not cost effective and feasible.

Conditional Exception 4: Non-residential buildings containing a for-profit restaurant open to the public or an employee kitchen may apply to a City Council appointed body, which body shall be designated from time to time by the City Council, for an exception to install gas-fueled cooking appliances. This request must be based on a business-related reason to cook with a flame that cannot be reasonably achieved with an electric fuel source. Examples include barbeque-themed restaurants and pizza ovens. The City Council appointed body shall grant this exception if they find the following:

1. There is a business-related reason to cook with a flame;
2. This need cannot be reasonably achieved with an electric fuel source;
3. The applicant has employed reasonable methods to mitigate the greenhouse gas impacts of the gas-fueled appliance;
4. The applicant shall comply with the pre-wiring provision of Note 1 below.

The City Council appointed body's decision shall be final unless the applicant appeals to the City Council within 15 days of the appointed body's decision. The City Council's decision on the appeal shall be final.

Note 1: If natural gas appliances are used in any of the above exceptions 1-4, natural gas appliance locations must also be electrically pre-wired for future electric appliance installation. They shall include the following:

1. A dedicated circuit, phased appropriately, for each appliance, with a minimum amperage requirement for a comparable electric appliance (see manufacturer's recommendations) with an electrical receptacle or junction box that is connected to the electric panel with conductors of adequate capacity, extending to within 3 feet of the appliance and accessible with no obstructions. Appropriately sized conduit may be installed in lieu of conductors;
2. Both ends of the unused conductor or conduit shall be labeled with the words "For Future Electric appliance" and be electrically isolated;
3. A reserved circuit breaker space shall be installed in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled for each circuit, an example is as follows (i.e "For Future Electric Range:") and

4. All electrical components, including conductors, receptacles, junction boxes, or blank covers, related to this section shall be installed in accordance with the California Electrical Code.

Note 2: If any of the exceptions 1-4 are granted, the Building Official shall have the authority to approve alternative materials, design and methods of construction or equipment per CBC 104.

Section 100.1(b) is modified by adding the following definitions:

ALL ELECTRIC BUILDING: is a building that has no natural gas or propane plumbing installed within the building, and that uses electricity as the source of energy for its space heating, water heating, cooking appliances, and clothes drying appliances. All Electric Buildings may include solar thermal pool heating.

Scientific Laboratory Building: is a building or area where research, experiments, and measurement in medical, and life sciences are performed and/or stored requiring examination of fine details. The building may include workbenches, countertops, scientific instruments, and supporting offices.

Section 100.1 is modified as follows:

SHADING – is the protection from heat gains because of direct solar radiation by permanently attached exterior devices of building elements, interior shading devices, glazing material, adherent materials, including items located outside the building footprint such as Heritage trees or high rise buildings that may affect shading.

Section 110.2 is modified as follows:

SECTION 110.2 – MANDATORY REQUIREMENTS FOR SPACE-CONDITIONING EQUIPMENT

Certification by Manufacturers. Any space-conditioning equipment listed in this section, meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified to the Commission that the equipment complies with all the applicable requirements of this section.

Section 110.3 is modified as follows:

SECTION 110.3 – MANDATORY REQUIREMENTS FOR SERVICE WATER-HEATING SYSTEMS AND EQUIPMENT

(a) Certification by manufacturers. Any service water-heating system or equipment, meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified that the system or equipment complies with all of the requirements of this subsection for that system or equipment.

Section 110.4 is modified as follows:

SECTION 110.4 – MANDATORY REQUIREMENTS FOR POOL AND SPA SYSTEMS AND EQUIPMENT

(a) Certification by Manufacturers. Any pool or spa heating system or equipment, meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified that the system or equipment has all of the following:

Section 110.5 is modified as follows:

SECTION 110.5 – NATURAL GAS CENTRAL FURNACES, COOKING EQUIPMENT, POOL AND SPA HEATERS, AND FIREPLACES: PILOT LIGHTS PROHIBITED

Any natural gas system or equipment, meeting the requirements of Section 100.0 (e)2A, listed below may be installed only if it does not have a continuously burning pilot light:

Section 110.10 is modified as follows:

SECTION 110.10 – MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS AND SOLAR PANEL SYSTEM REQUIREMENTS FOR NON-RESIDENTIAL NEW BUILDINGS

(a) Covered Occupancies.

1. Single Family Residences. Single family residences located in subdivisions with ten or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete approved by the enforcement agency, which do not have a photovoltaic system installed, shall comply with the requirements of Section 110.10(b) through 110.10(e).
2. Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed shall comply with the requirements of Section 110.10(b) through 110.10(d).
3. Hotel/Motel Occupancies and High-rise Multifamily Buildings. Hotel/motel occupancies and high-rise multifamily buildings with ten habitable stories or fewer shall comply with the requirements of Section 110.10(b) through 110.10(d)- and Table 2.
4. Nonresidential Buildings. Nonresidential buildings with three habitable stories or fewer, other than healthcare facilities, shall comply with the requirements of Section 110.10(b) through 110.10(d)- and Table 2.

Table 2: Solar panel requirements for all new nonresidential and high rise residential buildings

Square footage of building	Size of panel
Less than 10,000 sq. ft.	Minimum of 3-kilowatt PV systems
Greater than or equal to 10,000 sq. ft.	Minimum of 5-kilowatt PV systems
EXCEPTION: As an alternative to a solar PV system, the building type may provide a solar hot water system (solar thermal) with a minimum collector area of 40 square feet, additional to any other solar thermal equipment otherwise required for compliance with Part 6.	

(b) Solar Zone.

1. Minimum Solar Zone Area. The solar zone shall have a minimum total area as described below. The solar zone shall comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other Parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area shall be comprised of areas that have no dimension less than five feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet.
 - A. Single Family Residences. The solar zone shall be located on the roof or overhang of the building and have a total area no less than 250 square feet.

EXCEPTION 1 to Section 110.10(b)1A: Single family residences with a permanently installed domestic solar water-heating system meeting the installation criteria specified in the Reference Residential Appendix RA4 and with a minimum solar savings fraction of 0.50.

EXCEPTION 2 to Section 110.10(b)1A: Single family residences with three habitable stories or more and with a total floor area less than or equal to 2000 square feet and having a solar zone total area no less than 150 square feet.

EXCEPTION 3 to Section 110.10(b)1A: Single family residences located in the Wildland-Urban Interface Fire Area as defined in Title 24, Part 2 and having a whole house fan and having a solar zone total area no less than 150 square feet.

EXCEPTION 4 to Section 110.10(b)1A: Buildings with a designated solar zone area that is no less than 50 percent of the potential solar zone area. The potential solar zone area is the total area of any low-sloped roofs where the annual solar access is 70 percent or greater and any steep-sloped roofs oriented between 90 degrees and 300 degrees of true north where the annual solar access is 70 percent or greater. Solar access is the ratio of solar insolation including shade to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in the determination of annual solar access.

EXCEPTION 5 to Section 110.10(b)1A: Single family residences having a solar zone total area no less than 150 square feet and where all thermostats are demand responsive controls and comply with Section 110.12(a), and are capable of receiving and responding to Demand Response Signals prior to granting of an occupancy permit by the enforcing agency.

EXCEPTION 6 to Section 110.10(b)1A: Single family residences meeting the following conditions:

- A. All thermostats are demand responsive controls that comply with Section 110.12(a), and are capable of receiving and responding to Demand Response Signals prior to granting of an occupancy permit by the enforcing agency.
- B. Comply with one of the following measures:
 - i. Install a dishwasher that meets or exceeds the ENERGY STAR Program requirements with a refrigerator that meets or exceeds the ENERGY STAR Program requirements, a whole house fan driven by an electronically commutated motor, or an SAE J1772 Level 2 Electric Vehicle Supply Equipment (EVSE or EV Charger) with a minimum of 40 amperes; or
 - ii. Install a home automation system capable of, at a minimum, controlling the appliances and lighting of the dwelling and responding to demand response signals; or
 - iii. Install alternative plumbing piping to permit the discharge from the clothes washer and all showers and bathtubs to be used for an irrigation system in compliance with the California Plumbing Code and any applicable local ordinances; or

iv. Install a rainwater catchment system designed to comply with the California Plumbing Code and any applicable local ordinances, and that uses rainwater flowing from at least 65 percent of the available roof area.

B. Low-rise and High-rise Multifamily Buildings, Hotel/Motel Occupancies, and Nonresidential Buildings. The solar zone shall be located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building or on covered parking installed with the building project, and shall have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.

EXCEPTION 1 to Section 110.10(b)1B: High-rise Multifamily Buildings, Hotel/Motel Occupancies, and Nonresidential Buildings with a permanently installed solar electric system having a nameplate DC power rating, measured under Standard Test Conditions, of no less than one watt per square foot of roof area.

EXCEPTION 2 to Section 110.10(b)1B: High-rise multifamily buildings, hotel/motel occupancies with a permanently installed domestic solar water-heating system complying with Section 150.1(c)8Biii- and an additional collector area of 40 square feet.

EXCEPTION 3 to Section 110.10(b)1B: Buildings with a designated solar zone area that is no less than 50 percent of the potential solar zone area. The potential solar zone area is the total area of any low-sloped roofs where the annual solar access is 70 percent or greater and any steep-sloped roofs oriented between 90 degrees and 300 degrees of true north where the annual solar access is 70 percent or greater. Solar access is the ratio of solar insolation including shade to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in the determination of annual solar access.

EXCEPTION 4 to Section 110.10(b)1B: Low-rise and high-rise multifamily buildings with all thermostats in each dwelling unit are demand response controls that comply with Section 110.12(a), and are capable of receiving and responding to Demand Response Signals prior to granting of an occupancy permit by the enforcing agency. In addition, either A or B below:

- A. In each dwelling unit, comply with one of the following measures:
- i. Install a dishwasher that meets or exceeds the ENERGY STAR Program requirements with either a refrigerator that meets or exceeds the ENERGY STAR Program requirements or a whole house fan driven by an electronically commutated motor; or
 - ii. Install a home automation system that complies with Section 110.12(a) and is capable of, at a minimum, controlling the appliances and lighting of the dwelling and responding to demand response signals; or
 - iii. Install alternative plumbing piping to permit the discharge from the clothes washer and all showers and bathtubs to be used for an irrigation

system in compliance with the California Plumbing Code and any applicable local ordinances; or
iv. Install a rainwater catchment system designed to comply with the California Plumbing Code and any applicable local ordinances, and that uses rainwater flowing from at least 65 percent of the available roof area.

B. Meet the Title 24, Part 11, Section A4.106.8.2 requirements for electric vehicle charging spaces.

EXCEPTION 5 to Section 110.10(b)1B: Buildings where the roof is designed and approved to be used for vehicular traffic or parking or for a heliport.

Exception 6 to section 110.10(b)1B: Performance equivalency approved by the building official.

2. Azimuth. All sections of the solar zone located on steep-sloped roofs shall be oriented between 90 degrees and 300 degrees of true north.

3. Shading.

A. No obstructions, including but not limited to, vents, chimneys, architectural features, and roof mounted equipment, shall be located in the solar zone.

B. Any obstruction, located on the roof or any other part of the building that projects above a solar zone shall be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.

EXCEPTION to Section 110.10(b)3: Any roof obstruction, located on the roof or any other part of the building, that is oriented north of all points on the solar zone.

C. The solar zone needs to account for shading from obstructions that may impact the area required in 110.10(b)1B. When determined by the Building Official that conditions exist where excessive shading occurs and solar zones cannot be met, a performance equivalency approved by the Building Official may be used as an alternative.

4. Structural Design Loads on Construction Documents. For areas of the roof designated as solar zone, the structural design loads for roof dead load and roof live load shall be clearly indicated on the construction documents.

NOTE: Section 110.10(b)4 does not require the inclusion of any collateral loads for future solar energy systems.

(c) Interconnection Pathways.

1. The construction documents shall indicate a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service.

2. For single family residences and central water-heating systems, the construction documents shall indicate a pathway for routing of plumbing from the solar zone to the water-heating system.

(d) Documentation. A copy of the construction documents or a comparable document indicating the information from Sections 110.10(b) through 110.10(c) shall be provided to the occupant.

(e) Main Electrical Service Panel.

1. The main electrical service panel shall have a minimum busbar rating of 200 amps.
2. The main electrical service panel shall have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space shall be permanently marked as "For Future Solar Electric".

SECTION 5: EXEMPTION FROM CEQA. The City Council finds, pursuant to Title 14 of the California Administrative Code, Section 15061(b)(3) that this Ordinance is exempt from the requirements of the California Environmental Quality Act ("CEQA") on the grounds that these standards are more stringent than the State energy standards, there are no reasonably foreseeable adverse impacts and there is no possibility that the activity in question may have a significant effect on the environment.

SECTION 6: SEVERABILITY. If any part of this Ordinance is held to be invalid or inapplicable to any situation by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance or the applicability of this Ordinance to other situations.

SECTION 7: EFFECTIVE DATE. This Ordinance shall become effective following approval by the California Energy Commission, but in no event before January 1, 2020.

SECTION 8: POSTING. Within fifteen (15) days of its adoption, the Ordinance shall be posted in three (3) public places within the City of Menlo Park, and the Ordinance, or a summary of the Ordinance prepared by the City Attorney, shall be published in a local newspaper used to publish official notices for the City of Menlo Park prior to the effective date.

INTRODUCED on this tenth day of September, 2019.

PASSED AND ADOPTED as an ordinance of the City of Menlo Park at a regular meeting of said City Council on this twenty-fourth day of September 2019, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED:

Ray Mueller, Mayor

ATTEST:

Judi A. Herren, City Clerk