

# 2020 REACH CODES

JOE MCCLUSKEY,  
GREEN BUILDING SPECIALIST  
CITY OF BURLINGAME

HIRED BY BURLINGAME IN 2010 TO IMPLEMENT  
OUR FIRST REACH CODES.

15% BETTER THAN STANDARD ENERGY PERFORMANCE  
PLUS, ADDITIONAL GREEN MEASURES  
USING BUILD IT GREEN, GREEN POINT RATED

2010 REACH CODES APPLIED TO ALL PROJECTS  
VALUED AT \$50K OR HIGHER  
THIS INCLUDES NEW CONSTRUCTION BUT  
ALSO CAPTURED MANY REMODELS AND ADDITIONS

VERIFIED NEARLY 300 PROJECTS  
INVOLVED PHOTOS, RECEIPTS, LETTERS  
CUMBERSOME AND TIME CONSUMING

2020 REACH CODES ONLY APPLY TO NEW CONSTRUCTION  
SO WE HAVE TO CLEARLY DEFINE NEW

A 'SCRAPER,' FROM THE GROUND UP WITH A  
NEW FOUNDATION CLEARLY QUALIFIES AS NEW

PLANNING DEFINITION OF NEW IS BASED ON THE  
LINEAR FEET OF EXTERIOR WALL THAT REMAINS

ENERGY CODE DEFINITION OF NEW:  
'A BUILDING THAT HAS NEVER BEEN USED OR  
OCCUPIED FOR ANY PURPOSE'

BUILDING DEPARTMENT DEFINITION OF NEW  
CONSTRUCTION IS BASED ON VALUATION

IF THE VALUE OF THE NEW WORK IS GREATER THAN THE  
VALUE OF THE EXISTING STRUCTURE THEN IT IS DEEMED NEW

CITY COUNCIL EXPRESSED CONCERN THAT A PROJECT WITH A HIGH  
VALUATION WOULD BE FORCED TO REMOVE EXISTING GAS APPLIANCES

SO WE ADDED THE CAVEAT THAT A PROJECT WOULD ALSO  
HAVE TO REPLACE THE ENTIRE HVAC SYSTEM TO BE NEW

EXAMPLE PROJECT, 1400 SF HOUSE  
TEARING DOWN 600 SF  
KEEPING 800 SF  
ADDING 1200 SF

NEW?

CAREFULLY DESIGNED TO KEEP 74' 3" OF EXTERIOR WALL  
AND TO ADD 74' OF NEW EXTERIOR WALL

SO BY THE PLANNING DEFINITION THIS IS NOT NEW

I MADE THE CALL THAT THIS IS NEW  
WITH 800 SF OF EXISTING TO REMAIN  
AND 1200 SF OF NEW CONSTRUCTION  
PLUS, IT HAS ALL NEW HVAC

SO IS CLEARLY MORE THAN 50% NEW  
1200 SF NEW IS WORTH MORE THAN THE  
800 SF THAT WERE RETAINED

BURLINGAME DIVIDED THE REACH CODES  
INTO THREE SEPARATE ORDINANCES

SINGLE FAMILY RESIDENTIAL  
ORDINANCE 1979

MULTI-FAMILY RESIDENTIAL  
ORDINANCE 1980

NON-RESIDENTIAL  
ORDINANCE 1981



OUR REACH CODES HAVE THREE PARTS:

ELECTRIFICATION, AS IN GAS BAN

SOLAR PHOTO-VOLTAICS

AND EV CHARGERS

THE 2019 ENERGY CODE ALREADY REQUIRES  
A PV SYSTEM FOR NEW SINGLE FAMILY

TO AVOID CONFUSION WE DID NOT INCLUDE PV  
IN THE NEW SINGLE FAMILY REACH CODES

APPROVE BY THE CEC OCTOBER 16, 2020

TAKES TIME FOR PROJECTS TO WORK THEIR  
WAY THROUGH THE PROCESS  
FIRST DESIGN REVIEW AND PLANNING HEARINGS  
THEN BUILDING PLAN REVIEW

HAVE ISSUED 20 PERMITS WHICH  
INCLUDE REACH CODES  
10 MORE ARE IN THE PIPELINE

ALL OF THESE ARE SINGLE FAMILY HOUSES

HAVE HAD INQUIRIES ABOUT HOW THE REACH  
CODES APPLY TO LARGE NEW PROJECTS,  
MULTIFAMILY, OFFICES, LABORATORY, AND LIFE SCIENCES  
BUT HAVE NO ACTUAL SUBMITTALS TO DATE

LABS IN PARTICULAR SEEM TO ASSUME THAT THEY WILL JUST GET AN  
EXCEPTION WHICH ALLOWS NATURAL GAS

BUT FOR MULTIFAMILY WE DO NOT HAVE EXCEPTIONS

SO I WILL BE DISCUSSING PRIMARILY  
NEW SINGLE FAMILY

## EXCEPTIONS TO GAS BAN

FOR SINGLE FAMILY WE HAVE AN EXCEPTION FOR GAS FOR 'KITCHEN APPLIANCES' AND FOR 'FIRE-PITS AND FIRE-PLACES'

FOR COMMERCIAL WE HAVE AN EXCEPTION FOR FOR-PROFIT RESTAURANTS AND FOR COMMERCIAL KITCHENS.

THIS MEANS THAT COMPANIES CANNOT USE GAS IF THEY HAVE A FREE CAFETERIA FOR EMPLOYEES

WHEN THE APPLICANT CHOOSES AN EXCEPTION WE REQUIRE THEM TO PREWIRE AN EQUIVALENT ELECTRICAL CIRCUIT HAVE THEM PUT THIS EXACT NOTE ON THE FLOORPLANS

SO FOR A RANGE/COOKTOP THIS IS A:  
“DEDICATED 208/240V 50 AMP CAPACITY  
RECEPTACLE WITHIN 3 FEET”

FOR A FIREPLACE OR FIREPIT IT IS NOT CLEAR WHAT THE ‘EQUIVALENT CAPACITY’ WOULD BE SO I HAVE THEM INSTALL A 110V 20 AMP RECEPTACLE

FOR CLOTHES DRYING HAVE THEM PUT A NOTE  
NEXT TO W/D OR IN LAUNDRY ROOMS STATING THAT THEY  
WILL NOT USE GAS FOR CLOTHES DRYING.



FOR SOME PROJECTS I HAVE THEM ADD A NOTE TO THE COVER PAGE THAT THEY WILL NOT USE GAS FOR SPACE HEATING OR COOLING, WATER HEATING, OR CLOTHES DRYING.

BASED ON FEEDBACK FROM THE INSPECTORS WE CREATED  
A BIG RED STAMP FOR THE COVER PAGE THAT SAYS:

**2020 REACH  
CODES APPLY**

A TACTIC I USE WHEN PLAN CHECKING IS TO HAVE THEM REMOVE REFERENCES TO GAS METERS, GAS STUBS OUTS, FURNACES(FAU), TANKLESS WATER HEATERS, AC

SOME ARCHITECTS HAVE STANDARD DETAILS WHICH THEY INCLUDE ON EVERY PROJECT

ALSO REQUIRE THEM TO SHOW THE HEAT PUMPS ON THE PLANS

FOR PV THEY WILL CLAIM FOR THE EXCEPTION FOR SHADING

REQUIRE THEM TO DOCUMENT THE SHADING RATHER THAN TO JUST CLAIM THE EXCEPTION WITHOUT EVIDENCE. THIS WOULD BE VIA A CALCULATION RATHER THAN BY JUST STATING THAT IT LOOKS SHADY

HAD A PROJECT WHICH MARKED THE SHADE EXCEPTION  
FOR THE PV SYSTEM ON THE REACH CODE CHECKLIST

HOWEVER THE CF1R INCLUDED A PV SYSTEM

PART OF OUR JOB IS TO ENSURE THAT THE ENERGY REPORT  
AND THE PLANS HAVE THE SAME INFORMATION

## ENFORCEMENT AND IMPLEMENTATION

THE BUILDING INSPECTORS VERIFY  
ALL MEASURES IN THE FIELD  
BASED ON THE APPROVED PLANS

‘PLANS TELL THE STORY, NOT YOU’

FROM A LONG TIME INSPECTOR

AT SUBMITTAL I PLAN CHECK CALGREEN  
AND REACH CODE MEASURES TOGETHER  
ALL REACH CODE PROJECTS ARE  
SUBJECT TO CALGREEN

WHEN THE PROJECT IS NEARING COMPLETION  
I WILL VERIFY THAT THE PROJECT STATUS REPORT ON  
THE HERS REGISTRY REFLECTS THAT THE  
ENERGY CODE MEASURES HAVE BEEN SATISFIED

SO INSPECTORS VERIFY IN THE FIELD  
AND I VERIFY THE PROJECT STATUS REPORTS  
IN THE HERS REGISTRY ONLINE

## ACTUAL QUESTIONS

CAN WE PREPLUMB TO ADD IN GAS APPLIANCES LATER?

NO

CAN WE INSTALL A NATURAL GAS BACKUP GENERATOR?

NO, BUT SUGGEST YOU INSTALL BATTERY BACKUP AND PV

CAN WE INSTALL A DIESEL GENERATOR?

SADLY YES, NOT COVERED BY REACH CODES



## MORE QUESTIONS

CAN WE JUST RUN A HOT WATER LINE FROM THE  
EXISTING HOUSE TO THE NEW DETACHED ADU?  
SURE, THIS WILL SAVE THEM MONEY

HOWEVER, THAT WOULD NOT WORK FOR A FORCED AIR  
HEATING AND COOLING SYSTEM.

WOULD ALLOW THE LINE SET FROM A HEAT PUMP TO  
SERVICE A MAIN HOUSE AND AN ADU

PV FOR SINGLE FAMILY IS ALREADY PART OF  
THE BASIC ENERGY CODE, I.E., NOT PART OF THE REACH CODES

HAVE THEM PUT IN A NOTE THAT THEY WILL INSTALL A PV SYSTEM  
OF THE SIZE SPECIFIED IN THEIR ENERGY REPORT

ALSO HAVE THEM SHOW THE PV PANELS ON THE PLANS  
EITHER ON THE ROOF OR ON THE ELEVATIONS

HAVE NOTICED ON SEVERAL PLANS THAT THEY  
JUST PUT A NOTE ON THE NORTH FACING ROOF  
THAT THEY WILL HAVE PV PANELS  
SO I CALL THIS OUT

ON AN ADU PROJECT I HAD THEM ADD A NOTE THAT THEY  
WOULD SUBMIT FOR A SEPARATE 2.5KW PV SYSTEM

DIRECTLY BELOW THIS THEY ADDED:

‘GC TO PREPARE A SOLAR READY ROOF BY PROVIDING DEDICATED  
CONDUIT ... TO ROOF AREA ..’

I SIMPLY CROSSED THIS OFF THEIR PLANS

FOR EV CHARGERS HAVE THEM ADD NOTES TO THE PLANS WITH  
THE EXACT VERBIAGE FOR THE L2 AND L1 CHARGERS

DO NOT ACCEPT OTHER SYMBOLS OR VAGUE TERMS

IF THERE ARE TWO CHARGERS WE REQUIRE THAT  
BOTH CAN BE IN USE AT THE SAME TIME

ALLOW THEM TO PICK WHICH ONE  
SERVES WHICH PARKING SPACE

FOUND A NOTE ON A SET OF PLANS FOR AN  
'LLOV CAR CHARGER'

PRETTY SURE THEY MEANT A  
'110 VOLT CAR CHARGER'

FOR ELECTRIC VEHICLE CHARGERS WE USE THE  
PLANNING DEFINITION OF PARKING SPACES  
WHICH IS 10 FEET BY 20 FEET

EACH 20 FOOT SECTION OF DRIVEWAY  
COUNTS AS A PARKING SPACE.

THIS IS USEFUL WHEN THEY ARE CONVERTING A GARAGE TO AN ADU  
WE CAN'T REQUIRE THEM TO ADD OR REPLACE PARKING  
BUT WE CAN REQUIRE EV CHARGING IF THE SPACES EXIST

## ODD CASE WITH EV CHARGING

PROJECT INCLUDED CONVERSION OF AN  
EXISTING ATTACHED GARAGE TO AN ADU

PLANS SHOW AN EV CHARGER ATTACHED TO  
THE HOUSE ON THE SIDE OF THE DRIVEWAY

FACE OF GARAGE IS ONLY 7 FEET FROM THE SIDEWALK  
SO THERE IS NO ROOM TO PARK A CAR WITHOUT ENCROACHING  
ON THE SIDEWALK AND WE WON'T ALLOW THEM TO  
LEAVE THE CHARGING CORD LYING ON THE SIDEWALK

BIGGEST SURPRISE IS THE VARIETY OF SITUATIONS  
WITH VARIOUS TYPES OF ADU AND JADU  
ATTACHED, DETACHED, CONVERSION, MODULAR

HAVE TO GO BACK SOMETIMES AND READ THE  
ORDINANCE TO FIGURE OUT HOW TO APPLY IT



REACH CODES DO NOT APPLY TO MODULAR HOUSES  
SINCE THEY ARE TITLE 25, NOT TITLE 24  
APPLIES TO STRUCTURES BUILT OFF-SITE

THIS WAS CONFUSING SINCE THE FIRST CASE  
I HAD FOR A MODULAR SUBMITTED A  
T-24 ENERGY REPORT

## SUMMARY

GET AS MUCH ONTO THE PLANS AS POSSIBLE

GIVE CLEAR INSTRUCTION WITH VERBATIM NOTES

VERIFY THAT THE PLANS AND THE CF1R MATCH

RELY ON INSPECTORS IN THE FIELD

VERIFY ENERGY FEATURES ON THE HERS REGISTRY  
SO I DON'T HAVE TO GO TO JOBSITES

MASSIVE THANKS TO BAYREN

WOULD NOT, AND COULD NOT  
HAVE DONE THIS WITHOUT THEM

CONTACT INFO:

JOE MCCLUSKEY  
JMCCLUSKEY@BURLINGAME.ORG  
650.558.7273