



SAN FRANCISCO PLANNING DEPARTMENT

October 7, 2016

Ms. Angela Calvillo, Clerk
Honorable Supervisor Wiener
Board of Supervisors
City and County of San Francisco
City Hall, Room 244
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

**Re: Transmittal of Planning Department Case Number 2016-010605PCA:
Better Roofs Ordinance
Board File No. 1700122
Planning Commission Recommendation: *Approval***

Dear Ms. Calvillo and Supervisor Wiener,

On September 15, 2016, the Planning Commission conducted duly noticed public hearings at regularly scheduled meetings to consider the proposed Ordinance that would amend Planning Code Section 149, introduced by Supervisor Wiener. At the hearing the Planning Commission recommended approval.

The proposed amendments are not defined as a project under CEQA Guidelines Section 15060(c)(2) and 15378 because they do not result in a physical change in the environment.

Please find attached documents relating to the actions of the Commission. If you have any questions or require further information please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Aaron D. Starr".

Aaron D. Starr
Manager of Legislative Affairs

cc:
Thomas J. Owen, Deputy City Attorney
Andres Power, Aide to Supervisor Wiener
Andrea Ausberry, Office of the Clerk of the Board

Attachments:
Planning Commission Resolution
Planning Department Executive Summary



SAN FRANCISCO PLANNING DEPARTMENT

Planning Commission Resolution No. 19734

HEARING DATE: SEPTEMBER 15, 2016

Project Name: Amendments Relating to Better Roof Requirements
Case Number: 2016-010605PCA [Board File No. 1700122]
Initiated by: Supervisor Wiener / Introduced September 6, 2015
Staff Contact: Anne Brask, Citywide Planning Division
anne.brask@sfgov.org, 415-575-9078
Reviewed by: AnMarie Rodgers, Manager Legislative Affairs
anmarie.rodgers@sfgov.org, 415-558-6395

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RECOMMENDING THAT THE BOARD OF SUPERVISORS ADOPT A PROPOSED ORDINANCE THAT WOULD AMEND PLANNING CODE SECTION 149 TO ESTABLISH REQUIREMENTS FOR CERTAIN NEW BUILDING CONSTRUCTION FACILITATING DEVELOPMENT OF RENEWABLE ENERGY FACILITIES AND LIVING ROOFS; SETTING AN OPERATIVE DATE OF JANUARY 1, 2017; PROVIDING FINDINGS AS LOCAL CONDITIONS PURSUANT TO THE CALIFORNIA HEALTH AND SAFETY CODE; AFFIRMING THE PLANNING DEPARTMENT'S DETERMINATION UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT; AND MAKING FINDINGS OF CONSISTENCY WITH THE GENERAL PLAN AND THE EIGHT PRIORITY POLICIES OF PLANNING CODE SECTION 101.1.

WHEREAS, on September 6, 2016, Supervisors Wiener introduced a proposed Ordinance under Board of Supervisors (hereinafter "Board") File Number 1700122, which would amend Sections 149 of the Planning Code to establish requirements for certain new building construction facilitating development of renewable energy facilities and living roofs;

WHEREAS, The Planning Commission (hereinafter "Commission") conducted a duly noticed public hearing at a regularly scheduled meeting to consider the proposed Ordinance on September 15, 2016; and,

WHEREAS, the proposed Ordinance has been determined to be categorically exempt from environmental review under the California Environmental Quality Act Section 15060(c); and

WHEREAS, the Planning Commission has heard and considered the testimony presented to it at the public hearing and has further considered written materials and oral testimony presented on behalf of Department staff and other interested parties; and

WHEREAS, all pertinent documents may be found in the files of the Department, as the custodian of records, at 1650 Mission Street, Suite 400, San Francisco; and

WHEREAS, the Planning Commission has reviewed the proposed Ordinance; and

MOVED, that the Planning Commission hereby recommends that the Board of Supervisors approve the proposed ordinance.

FINDINGS

Having reviewed the materials identified in the preamble above, and having heard all testimony and arguments, this Commission finds, concludes, and determines as follows:

1. The proposed Ordinance will amend the Planning Code to include Better Roof Requirements for some new construction buildings.
2. **General Plan Compliance.** The proposed amendments to the Planning Code are not addressed in the General Plan; the Commission finds that the proposed Ordinance is not inconsistent with the Objectives and Policies of the General Plan.
3. **Planning Code Section 101 Findings.** The proposed amendments to the Planning Code are consistent with the eight Priority Policies set forth in Section 101.1(b) of the Planning Code in that:

1. That existing neighborhood-serving retail uses be preserved and enhanced and future opportunities for resident employment in and ownership of such businesses enhanced;

The proposed Ordinance would not have a negative impact on neighborhood serving retail uses and will not impact opportunities for resident employment in and ownership of neighborhood-serving retail.

2. That existing housing and neighborhood character be conserved and protected in order to preserve the cultural and economic diversity of our neighborhoods;

The proposed Ordinance would not have a negative effect on housing or neighborhood character.

3. That the City's supply of affordable housing be preserved and enhanced;

The proposed Ordinance would not have an adverse effect on the City's supply of affordable housing.

4. That commuter traffic not impede MUNI transit service or overburden our streets or neighborhood parking;

The proposed Ordinance would not result in commuter traffic impeding MUNI transit service or overburdening the streets or neighborhood parking.

5. That a diverse economic base be maintained by protecting our industrial and service sectors from displacement due to commercial office development, and that future opportunities for resident employment and ownership in these sectors be enhanced;

The proposed Ordinance would not cause displacement of the industrial or service sectors due to office development, and future opportunities for resident employment or ownership in these sectors would not be impaired.

6. That the City achieve the greatest possible preparedness to protect against injury and loss of life in an earthquake;

The proposed Ordinance would not have an impact on City's preparedness against injury and loss of life in an earthquake.

7. That the landmarks and historic buildings be preserved;

The proposed Ordinance would not have an impact on the City's Landmarks and historic buildings.

8. That our parks and open space and their access to sunlight and vistas be protected from development;

The proposed Ordinance would not have an impact on the City's parks and open space and their access to sunlight and vistas.

- 4. Planning Code Section 302 Findings.** The Planning Commission finds from the facts presented that the public necessity, convenience and general welfare require the proposed amendments to the Planning Code as set forth in Section 302.

NOW THEREFORE BE IT RESOLVED that the Commission hereby recommends that the Board ADOPT the proposed Ordinance as described in this Resolution.

I hereby certify that the foregoing Resolution was adopted by the Commission at its meeting on September 15, 2016.


Jonas P. Ionin
Commission Secretary

AYES: Fong, Johnson, Moore, Hillis, Koppel

NOES: None

ABSENT: Richards

ADOPTED: September 15, 2016



SAN FRANCISCO PLANNING DEPARTMENT

Executive Summary Planning Code Text Amendment

HEARING DATE: SEPTEMBER 15, 2016

Project Name: Better Roofs Ordinance
Case Number: 2016-010605PCA [Board File No. 1700122]
Initiated by: Supervisor Wiener / Introduced September 6, 2016
Staff Contact: Anne Brask, Planner/Designer Citywide Division
anne.brask@sfgov.org, 415-575-9078
Reviewed by: Jeff Joslin, Director of Current Planning
jeff.joslin@sfgov.org, 415-575-9117
Recommendation: **Recommend Approval**

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PLANNING CODE AMENDMENT

The proposed Ordinance amends the Planning Code to establish standards for new building construction facilitating development of renewable energy facilities and living roofs.

The Way It Is Now:

Under existing state law, California's Title 24 Energy Standards require 15% of roof area on new small and mid-sized buildings to be "solar ready," which means the roof is unshaded by the proposed building itself, and free of obtrusions. This state law applies to all new residential and commercial buildings of 10 floors or less. In April 2016 a unanimous vote was passed by the Board of Supervisors that builds on this state law by requiring 15% of "solar ready" roof area to have solar actually installed.

The Way It Would Be:

In addition to the regulations above, the Better Roof Ordinance will include a living roof alternative to the solar requirement. With this proposal, between 15% and 30% of roof space on most new construction will incorporate solar, living (green) roofs, or a combination of both. The living roof option will allow developers to replace required solar with living roof at a rate of 2 square feet of living roof for every 1 square foot of solar.

BACKGROUND

A Brief History of California Title 24

The ordinance builds on existing California State building code which, since July 1, 2014, has required most new buildings to be design with a minimum area of roof space designated as "Solar Ready" if solar is not installed at the time of construction. The roof area designated as the Solar Ready zone must be designed to be free of obstructions and shading that could interfere with installation or performance of a future solar energy system.

The Better Roof ordinance requires the building designer to first calculate the Solar Ready area required under California Title 24 Part 6 Building Energy Standards. This area is equal to 15 percent of total roof

area for multifamily and non-residential buildings, and 250 square feet for single family homes. The ordinance requires that the Solar Ready zone be put to productive use by installing solar energy systems at time of construction.

A Brief History of San Francisco Living Roofs

Living roofs (also known as vegetated or green roofs) have been heavily researched by the Planning Department in recent history. In 2013, San Francisco hosted the National Green Roof Conference, Cities Alive. Co-sponsored by the Planning Department and the San Francisco Public Utilities Commission (SFPUC), the conference offered three days of presentations on policy, design, and technology related to living roofs. In preparation for the 2013 conference, SPUR formed the Green Roof Task Force to produce the “Greener and Better Roofs Roadmap” report recognizing that – in addition to being a prime location for renewable energy resources – roofs can host ‘green’ or ‘living roofs’ with many additional benefits such as reducing stormwater entering the sewer, reducing energy consumption, augmenting roof life, improving city views, enhancing biodiversity and habitat, sequestering carbon, capturing pollution, and connecting citizens with nature. The SPUR Roadmap provided recommended next steps for green roof progress in San Francisco, including the introduction of legislation.

After the Cities Alive Conference, the Planning Department formed a Living (Green) Roof team to continue research on San Francisco specific rooftops. The team led tours of existing rooftops in the city, conducted interviews of designers, analyzed other city efforts, and researched San Francisco’s environmental aspects that make living roofs unique here. Our team worked with another taskforce of interested stakeholders and city agencies to understand differing priorities, roles, and best next steps for encouraging living roofs in San Francisco. The culmination of this information was crafted into a Living Roof Manual¹, Living Roof webpage², and a Living Roof map³ of San Francisco. This ongoing work since 2013 led to the opportunity to work with San Francisco Department of the Environment on a holistic Better Roof Ordinance.

ISSUES AND CONSIDERATIONS

These Technologies Are Cost Effective.

Department of Environment has completed cost effectiveness analysis of solar photovoltaics. ARUP Engineers performed cost effectiveness analysis of living roofs on behalf of the Planning Department and Environment. Both of these cost analyzes show that solar and green roofs are indeed cost effective.

To understand the implications of solar energy as a compliance option, the cost-effectiveness of meeting the proposed Better Roof requirement entirely with photovoltaics was studied. A variety of building types and uses were modeled, from single-family homes to high-rise office. The analysis assumed the building owner paid all costs and derived all benefits from the photovoltaic system. The solar financial analysis considered costs and benefits over a 25-year period. Costs included the one-time costs to design, purchase and install the photovoltaic system, as well as the ongoing costs of financing, operation,

¹ http://default.sfplanning.org/publications_reports/Living_Roof_Manual_Web-102815.pdf

² <http://sf-planning.org/san-francisco-living-roofs>

³ http://sfgov.maps.arcgis.com/apps/OnePane/storytelling_basic/index.html?appid=1fe7486496ec45a397dea0254b96e546

maintenance and insurance. Benefits included the ongoing value of solar electricity generated (it was assumed that the solar electricity directly reduced the electricity purchased from the utility by the owner), and the net reduction to the owner's federal and state taxes owed.

The analysis shows that installing photovoltaics to comply with the proposed Better Roof ordinance is cost-effective for all building types with today's input values. The avoided emissions resulting from the clean electricity generated by photovoltaic systems is a benefit to the broader community that was not factored into the cost-effectiveness calculation. The aggregate impact of installing photovoltaics to minimally comply with the proposed Better Roof ordinance on all 200 major new construction projects in San Francisco Planning Department's project pipeline as of third quarter 2014 would be to avoid over 26,000 metric tons of carbon dioxide emissions per year.

ARUP engineers analyzed the cost-effectiveness of meeting the Better Roofs requirement entirely with a living roof instead of solar for the alternative compliance path. The analysis was conducted with a living roof that uses 6 inches of lightweight media with native and adapted plants and two building types of similar size that are good candidates for living roofs: medium commercial and small multifamily. The costs and benefits of the living roof were compared to the costs and benefits of a baseline membrane roof with cool white coating that is a requirement for prescriptive compliance with California Title 24 for these building types. Both the living roof and baseline were modeled as part of an overall building development package required to comply with San Francisco's Stormwater Management Ordinance.

Costs and benefits of the living roof over a 25-year period are presented as those net of the costs and benefits of the baseline roof. In addition to installation costs, recurring costs of maintenance, irrigation, and reroofing were evaluated. Benefits included the avoided one-time cost of installing stormwater management equipment that would be required if not for the living roof, as well as ongoing benefits of energy savings, carbon abatement, heat island mitigation, air quality improvement, noise abatement, habitat addition, productivity increase based on biophilic effect, job creating and increased real estate value. The methodology applied by ARUP was based in large part on prior work for the US General Services Administration. Living roof data from San Francisco was used in the financial analysis, and supplemented with national data when necessary. Local data were afforded greater weight in all calculations.

The analysis found that a living roof provides net financial benefit to the building owner, while providing significant additional benefit to the tenants, and the broader community. The largest cost of a living roof – the one-time installation cost – is largely offset by the avoided one-time stormwater management equipment costs that would be incurred with the baseline roof. Both of these one-time costs and benefits accrue directly to the building owner.

The largest potential benefits is added real estate value, which also accrues to the building owner. Added real estate value may be realized in the form of faster tenant recruitment and longer retention, risk reduction, higher rent, and increased net operating income (NOI) due to operating expense savings. However, even in the absence of these benefits, which are well documented, the living roof was found to be cost-neutral.

The figures from the cost benefit analysis show the net costs and net benefits of the living roof compared to the baseline roof for the range of the stakeholders in development: owner, owner & occupier, tenant, and the community. Excluding ~~benefit~~~~benefits~~ to real estate value, benefit to the owner were found to offset the costs. The net impact is greater for an owner-occupied building in which the owner benefits from energy saving and biophilic effects.

Compliance with the proposed Better Roof ordinance via either a living roof or solar photovoltaics is cost-effective. The analyses showed that for both living roofs and photovoltaics, when all costs and benefits are combined and accrue over a 25-year period, the costs to the building owner are more than offset by the benefits. Cost-effectiveness can be expected to improve over time if the industry continues to trend toward lower system costs and higher energy production per unit.

There Is Precedent For These Types Of Regulation.

Since 2013, three California cities, Lancaster, Sebastopol, and Santa Monica, have adopted requirements to install a minimum amount of solar photovoltaic's on new buildings. These cities are each considerably less dense than San Francisco. **With this Better Roof Ordinance, San Francisco would be the first major US city to require solar on new buildings.**

Similarly, major U.S. ~~cities~~ including Chicago, Washington D.C., and Portland require living roofs on certain new buildings. Chicago had a three-year grant program that offered a subsidy of \$5,000 per project, in an effort to cool the city during the summer for urban heat island mitigation. Portland had a similar program for municipal buildings. France has also advanced a similar regulation requiring solar and/or living roofs, however it will not take effect until later in 2017.

Roofs Are An Undervalued Opportunity.

Rooftops are 30% of San Francisco's land area, and in a dense urban city, an untapped resource. The proposed ordinance will ~~provide~~~~provide~~ flexibility for the building designer, owner, and developer to choose the best combination of solar photovoltaic, solar water heating and living roof systems to maximize benefit based on location and building program. With the myriad of benefits that these technologies provide, the legislation would encourage a higher and better utilization of valuable rooftop space.

The Better Roofs Ordinance cumulatively mandates solar, but allows living roofs to be provided in lieu of, or in addition to, solar. The solar requirement made use of a pre-existing statutory requirement to ~~preserve~~~~preserve~~ 15% of the roof for solar, requiring solar to be installed in that required area. The Better Roofs Ordinance allows 30% of the roof as a living roof to meet this requirement. A project will be able to comply by meeting one or the other, or a blend of the two.

Future research for furthering the utilization of roofs may include

- Potential of 100% utility of rooftops
- Requirements for alterations to existing building
- Better roof uses that include open space and urban agriculture

Uses Defined in the Planning Code.

In the Planning Code, Living Roof, Living Roof Area, and Minimum Better Roof Area are defined solely by their physical characteristics; aspects that are verifiable and have a clear and direct connection to the land use. The quality and detail of a living roof is outside of the Planning Department area of expertise. Our coordination with the San Francisco Public Utilities Commission is crucial in the success of living roofs. The Planning Department and SFPUC have created a strong foundation for continued teamwork to ensure quality review of Better Roof projects.

Working with the Stormwater Management Ordinance.

Review will remain the same for the Public Utilities Commission where responsibility and process will not change. The PUC will continue reviewing projects which are required to meet the Stormwater Management Ordinance (SMO). Living roofs are one of the Best Management Practices (BMPs) that is reviewed for compliance with the ordinance. SFPUC is not responsible for verifying the amount and location of Better Roof Area.

REQUIRED COMMISSION ACTION

The proposed Ordinance is before the Commission so that it may recommend adoption, rejection, or adoption with modifications to the Board of Supervisors.

RECOMMENDATION

The Department recommends that the Commission recommend *approval* of the proposed Ordinance and adopt the attached Draft Resolution to that effect.

BASIS FOR RECOMMENDATION

The Planning Department's strongly supports the Better Roofs requirements and Living Roof alternative as a way to enhance the utility of roofs in our city. San Francisco is known for its innovative stewardship and strong reputation for being a green, healthy, and sustainable city. The Planning Department has been at the forefront of living roof research specific to San Francisco for the past four years and we continue to update and track new technologies within this sector. By providing options for a Better Roof, the designer, developer, or owner is not forced into one use that may not be appropriate for their site or design.

As we know, in a dense urban environment, the roof becomes a valuable resource for land use opportunities and sustainable technology. The proposed Ordinance is a great place to start in thinking about how our rooftops can provide more for our neighborhoods. Future research may include the potential for urban agriculture, the inclusion of open space, and a combination of each of these uses to allow for a holistic better rooftop. Other options for the Ordinance could apply an iteration of the requirements to existing buildings undergoing alterations.

The Planning Department has worked very closely with our colleagues at the Department of the Environment and San Francisco Public Utilities Commission to ensure a successful implementation of the ordinance and will continue to look for areas to improve.

IMPLEMENTATION

The Department determined that this Ordinance will impact our current implementation procedures; however the proposed changes can be implemented without increasing permit costs or review time. The ordinance will impact our current implementation procedures in the following ways:

- The Better Roofs Ordinance will require planners to review the proposed plans for compliance with the rooftop area requirements. The applicant can choose to provide solar power on 15% of their rooftop space, living roof on 30% of their rooftop space, or a combination of the two to meet the Planning Code.
- Several SOP documents would have to be amended including additional language for PPAs.
- Planning would also take the lead in producing the Better Roof Project Guide and a ZA Bulletin for assistance with implementation.
 - The Better Roof Project Guide will include: Living Roof Definition & Living Roof Manual reference; Review process; SMO and Non-Potable references; Roof definition; Roof design scenarios.

ENVIRONMENTAL REVIEW

The proposed amendments are not defined as a project under CEQA Guidelines Section 15060(c) and 15378 because they do not result in a physical change in the environment.

PUBLIC COMMENT

As of date of this report, the Department has received no public comment on the Better Roof legislation but has participated with a working group of interested stakeholders and city agencies, as well as outreach to building owners and developers on the legislation.

RECOMMENDATION:	Recommendation of Approval
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Attachments:

Exhibit A: Draft Planning Commission Resolution

Exhibit B: Board of Supervisors File No. 1700122