SAN FRANCISCO
**PLANNING DEPARTMENT**

# Discretionary Review
## Abbreviated Analysis
HEARING DATE: NOVEMBER 14, 2013

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

Reception:
**415.558.6378**

Fax:
**415.558.6409**

Planning
Information:
**415.558.6377**

| | |
|---|---|
| *Date:* | November 7, 2013 |
| *Case No.:* | **2013.0959D** |
| *Project Address:* | **1040 BRODERICK STREET** |
| *Permit Application:* | 2013.03.05.1549 |
| *Zoning:* | RM-3 (Residential Mixed, Medium Density) District<br>40-X Height and Bulk District |
| *Block/Lot:* | 1129/031 |
| *Project Sponsor:* | Amanda Clark c/o Bjoern Steudte<br>CCS Architecture<br>44 McLea Court<br>San Francisco, CA 94103 |
| *Staff Contact:* | Elizabeth Watty – (415) 588-6169<br>Glenn.Cabreros@sfgov.org |
| *Recommendation*: | **Do not take DR and approve as proposed** |

## PROJECT DESCRIPTION

The project proposes a three-story rear addition to the existing two-story-over-basement, single-family residence. The addition will be located approximately within the footprint of an existing deck that is proposed to be removed.

## SITE DESCRIPTION AND PRESENT USE

The subject site is located on the east side of Broderick Street between Eddy and Turk Streets on Lot 031 in Assessor's Block 1129. The subject lot is 27.5 feet wide by 100 feet deep with an area of 2,750 square feet. The lot is developed with a two-story-over-garage, single-family residence constructed circa 1900. The residence is set back 27 feet from the front property line with a 25-foot rear yard (measured from the existing deck to the rear property line).

## SURROUNDING PROPERTIES AND NEIGHBORHOOD

The adjacent property to the south is a "sister" lot and building to the subject property, having the same lot size and also developed with a two-story-over-garage residential building set back approximately 27 feet from the front property line; however this adjacent building contains two dwelling units. The adjacent property to the north (1965-1977 Eddy Street, a.k.a. "Sunhouse Complex") is a corner lot developed with five, single-family townhomes facing Eddy Street. The adjacent property to the north contains a 24-foot deep rear yard that abuts the north side property line of the subject project. The neighborhood character along the subject blockface consists of two- and three-story residential buildings containing one to three dwelling units. The opposite blockface is generally characterized by three- and four-story residential buildings containing one to four units.

## BUILDING PERMIT NOTIFICATION

| TYPE | REQUIRED PERIOD | NOTIFICATION DATES | DR FILE DATE | DR HEARING DATE | FILING TO HEARING TIME |
|---|---|---|---|---|---|
| 311 Notice | 30 days | June 17, 2013 – July 16, 2013 | July 16, 2013 | November 14, 2013 | 121 days |

## HEARING NOTIFICATION

| TYPE | REQUIRED PERIOD | REQUIRED NOTICE DATE | ACTUAL NOTICE DATE | ACTUAL PERIOD |
|---|---|---|---|---|
| Posted Notice | 10 days | November 4, 2013 | November 4, 2013 | 10 days |
| Mailed Notice | 10 days | November 4, 2013 | November 4, 2013 | 10 days |

## PUBLIC COMMENT

| | SUPPORT | OPPOSED | NO POSITION |
|---|---|---|---|
| Adjacent neighbor(s) | | X (DR requestor) | |
| Other neighbors on the block or directly across the street | | | |
| Neighborhood groups | | | |

## DR REQUESTOR

**Leslie Donaldson** of **1965 Eddy Street**, directly adjacent and north of the subject lot.

## DR REQUESTOR'S CONCERNS AND PROPOSED ALTERNATIVES

See attached *Discretionary Review Application*, dated July 14, 2013.

## PROJECT SPONSOR'S RESPONSE TO DR APPLICATION

See attached *Response to Discretionary Review*, dated November 4, 2013.

## ENVIRONMENTAL REVIEW

The Department has determined that the proposed project is exempt/excluded from environmental review, pursuant to CEQA Guideline Section 15301 (Class One - Minor Alteration of Existing Facility, (e) Additions to existing structures provided that the addition will not result in an increase of more than 10,000 square feet).

## RESIDENTIAL DESIGN TEAM (RDT) REVIEW

RDT finds that the project does not create exceptional or extraordinary circumstances. The three-story massing is in keeping with the existing building mass and is compatible with the patterns of the surrounding development. The addition is also appropriately placed at the rear of the building, which is a potential historic resource. While access to solar energy is neither protected by the Planning Code nor the Residential Design Guidelines, light and air access to the DR Requestor's property is preserved, as the requestor's property contains an approximately 24-foot deep rear yard. Additionally, per a shadow study submitted by the project sponsor, the rear addition would create minimal new shadow during the winter months and only during certain times of the day.

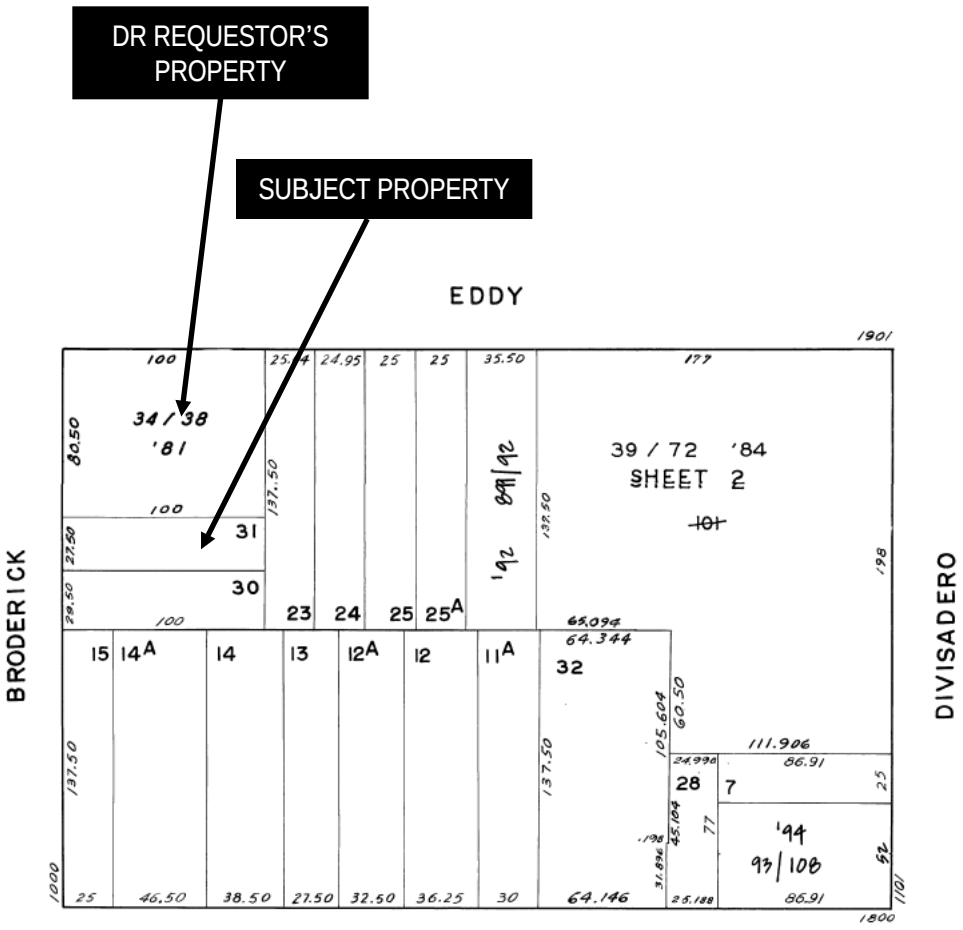
**Under the Commission's pending DR Reform Legislation, this project would not be referred to the Commission as this project does not contain or create any exceptional or extraordinary circumstances.**

| **RECOMMENDATION:** | **Do not take DR and approve project as proposed** |
|---|---|

**Attachments:**
Parcel Map
Sanborn Map
Aerial Photograph
Zoning Map
Section 311 Notice
DR Application
Project Sponsor Submittal: Photos, Reduced Plans and Shadow Study

*G:\Documents\2013\DR\2013.0959D - 1040 Broderick\2013.0959D - 1040 Broderick - Analysis.doc*

# Parcel Map


DR REQUESTOR'S PROPERTY
SUBJECT PROPERTY
EDDY
BRODERICK
DIVISADERO
34 / 38 '81
39 / 72 '84
SHEET 2
101
31
30
23
24
25
25A
15
14A
14
13
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32
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7
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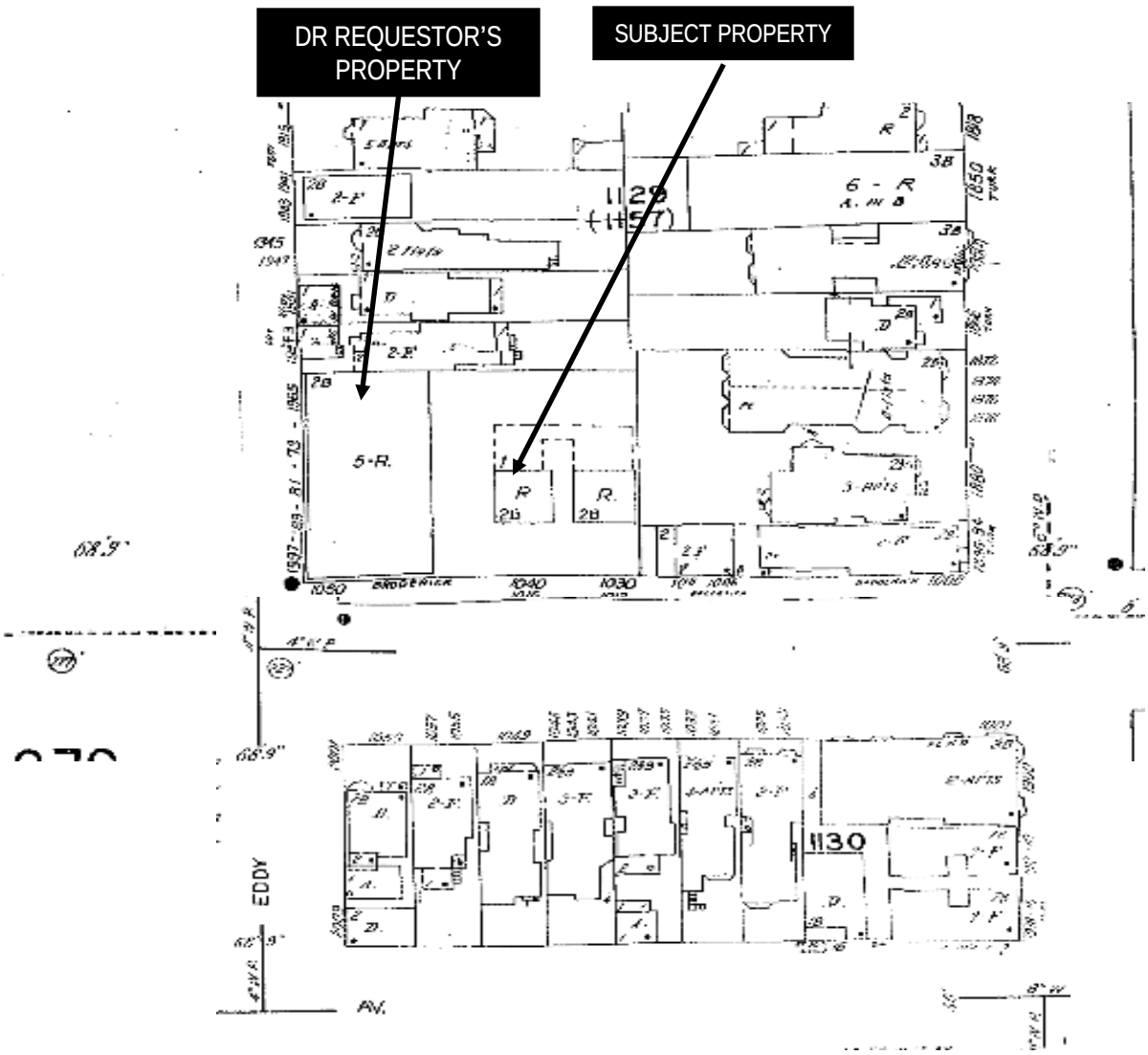
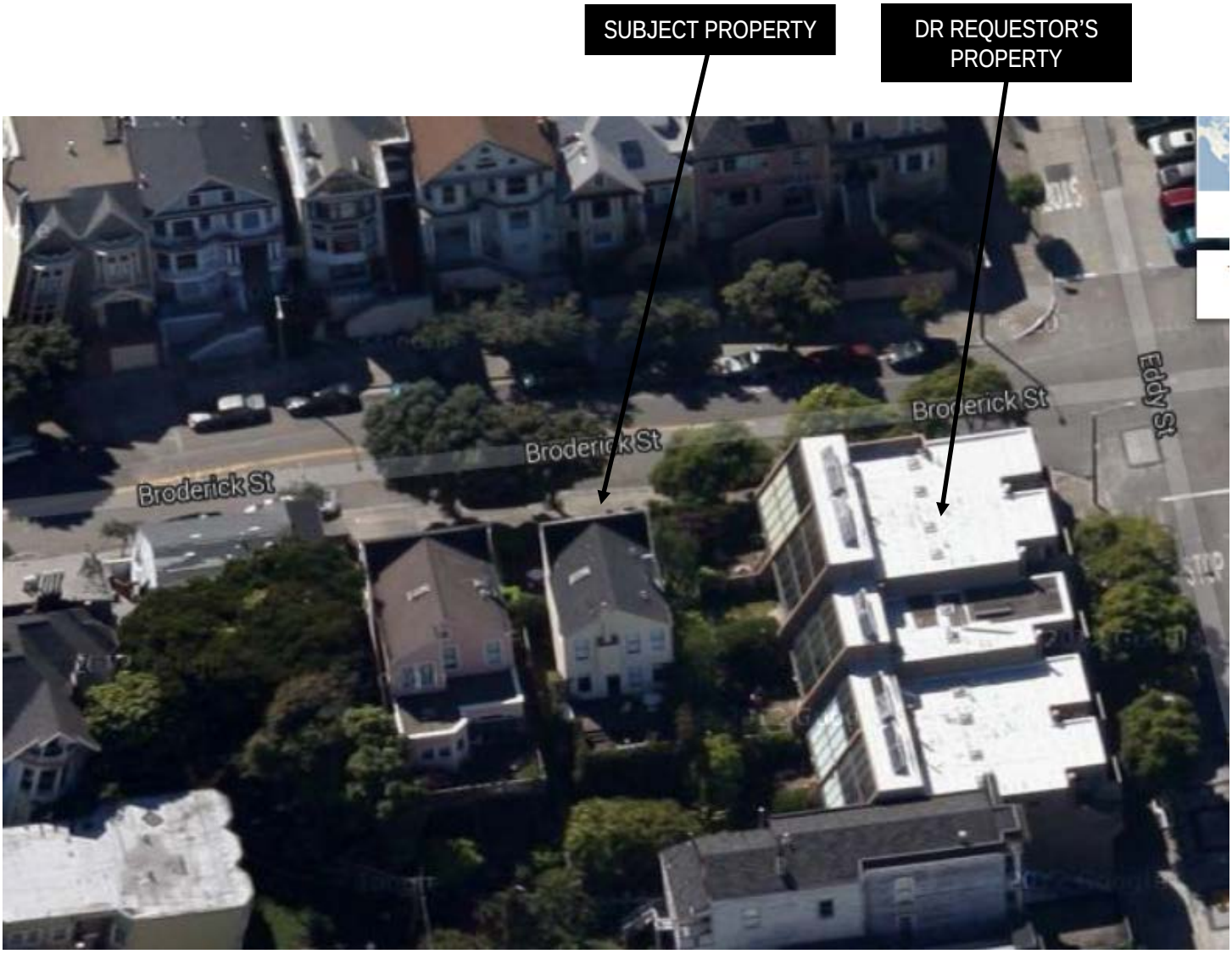
93 / 108
1901
1800
1000
1101

# Sanborn Map*

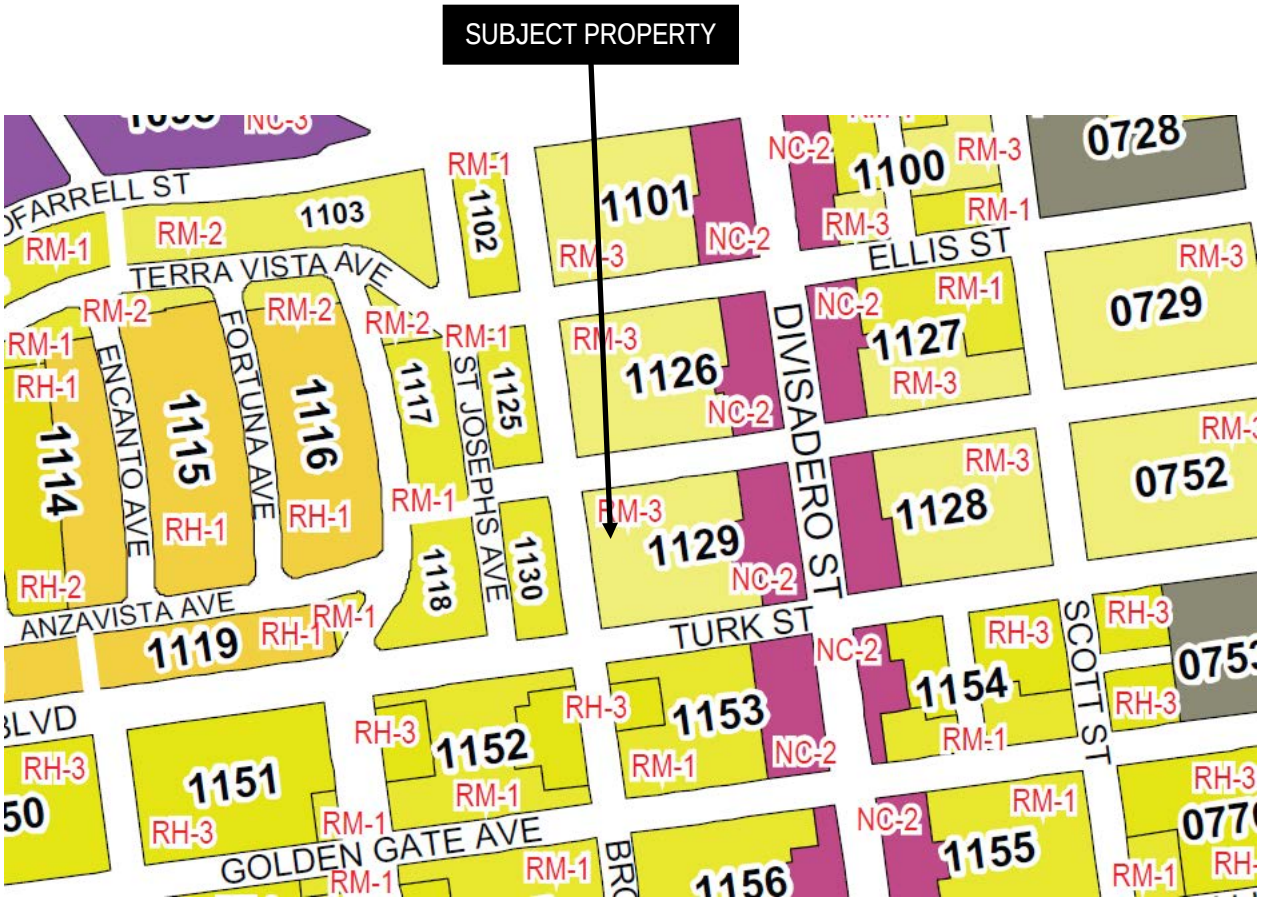



**The Sanborn Maps in San Francisco have not been updated since 1998, and this map may not accurately reflect existing conditions.*

# Aerial Photo – Rear Facade



# Zoning Map




Discretionary Review Hearing
**Case Number 2013.0959D**
1040 Broderick Street
Hearing Date: November 14, 2013

SAN FRANCISCO
**PLANNING DEPARTMENT**
1650 Mission Street Suite 400 San Francisco, CA 94103

# NOTICE OF BUILDING PERMIT APPLICATION (SECTION 311)

On **March 5, 2013**, the Applicant named below filed Building Permit Application No. **2013.03.05.1549** (Alteration) with the City and County of San Francisco.

| CONTACT INFORMATION | | PROJECT SITE INFORMATION | |
|---|---|---|---|
| Applicant: | **Bjorn Steudte, CCS Archtecture** | Project Address: | **1040 Broderick Street** |
| Address: | **44 McLea Court** | Cross Streets: | **Eddy/Turk Streets** |
| City, State: | **San Francisco, CA 94103** | Assessor's Block /Lot No.: | **1129/031** |
| Telephone: | **(415) 864-2800 ext. 314** | Zoning Districts: | **RM-3 /40-X** |

Under San Francisco Planning Code Section 311, you, as a property owner or resident within 150 feet of this proposed project, are being notified of this Building Permit Application. You are not obligated to take any action. For more information regarding the proposed work, or to express concerns about the project, please contact the Applicant above or the Planner named below as soon as possible. If you believe that there are exceptional or extraordinary circumstances associated with the project, you may request the Planning Commission to use its discretionary powers to review this application at a public hearing. Applications requesting a Discretionary Review hearing must be filed during the 30-day review period, prior to the close of business on the Expiration Date shown below, or the next business day if that date is on a week-end or a legal holiday. If no Requests for Discretionary Review are filed, this project will be approved by the Planning Department after the Expiration Date.

## PROJECT SCOPE

| | | |
|---|---|---|
| **[ ] DEMOLITION and/or** | **[ ] NEW CONSTRUCTION or** | **[X] ALTERATION** |
| **[ ] VERTICAL EXTENSION** | **[ ] CHANGE # OF DWELLING UNITS** | **[X] FACADE ALTERATION(S)** |
| **[ ] HORIZ. EXTENSION (FRONT)** | **[ ] HORIZ. EXTENSION (SIDE)** | **[X] HORIZ. EXTENSION (REAR)** |

| PROJECT FEATURES | EXISTING CONDITION | PROPOSED CONDITION |
|---|---|---|
| **BUILDING USE** | Single-Family Dwelling | No Change |
| **FRONT SETBACK** | 27 feet | No Change |
| **SIDE SETBACKS** | 5 feet @ south side | No Change |
| **BUILDING DEPTH** | 28 feet | 47 feet |
| **REAR YARD** | 25 feet to deck | 25 feet to new rear wall |
| **HEIGHT OF BUILDING** | 32 feet (to parapet/ridge) | No Change |
| **NUMBER OF STORIES** | 2 over basement | No Change |
| **NUMBER OF DWELLING UNITS** | 1 | No Change |
| **NUMBER OF OFF-STREET PARKING SPACES** | 1 | No Change |

## PROJECT DESCRIPTION

The proposal is to construct a three-story rear addition to the existing single-family residence. Front façade alterations are limited to replacement wood windows. See attached plans.

PLANNER'S NAME: **Glenn Cabreros**

PHONE NUMBER: **(415) 558-6169**

EMAIL: **glenn.cabreros@sfgov.org**

DATE OF THIS NOTICE: **06/17/2013**

**EXPIRATION DATE: 07/16/2013**

Application for **Discretionary Review**

CASE NUMBER: 13.0959D

# APPLICATION FOR
# Discretionary Review

1. Owner/Applicant Information

DR APPLICANT'S NAME: Leslie Donaldson

DR APPLICANT'S ADDRESS: 1965 Eddy St | ZIP CODE: 94115-3923 | TELEPHONE: (415) 563-2525

PROPERTY OWNER WHO IS DOING THE PROJECT ON WHICH YOU ARE REQUESTING DISCRETIONARY REVIEW NAME: Amanda Clarke

ADDRESS: 1040 Broderick St. | ZIP CODE: 94115 | TELEPHONE: (415) 553-7880

CONTACT FOR DR APPLICATION:

Same as Above X

ADDRESS: | ZIP CODE: | TELEPHONE: ( )

E-MAIL ADDRESS: Leslie.Donaldson@ktvu.com

2. Location and Classification

STREET ADDRESS OF PROJECT: 1040 Broderick St. | ZIP CODE: 94115

CROSS STREETS: Eddy / Turk Streets

| ASSESSORS BLOCK/LOT: | LOT DIMENSIONS: | LOT AREA (SQ FT): | ZONING DISTRICT: | HEIGHT/BULK DISTRICT: |
|---|---|---|---|---|
| 1129/031 | | | RM-3/40-X | No Bulk-Limit |

3. Project Description

Please check all that apply

Change of Use ☐ Change of Hours ☐ New Construction ☐ Alterations ☒ Demolition ☐ Other ☐

**Additions to Building:** Rear ☒ Front ☐ Height ☐ Side Yard ☐

Present or Previous Use: Single-Family Dwelling

Proposed Use: No Change

Building Permit Application No. 2013.03.05.1549 (Alteration) Date Filed: 3-5-13

RECEIVED

JUL 16 2013

CITY & COUNTY OF S.F.
PLANNING DEPARTMENT
PIC

Application for **Discretionary Review**

CASE NUMBER: 13.0959D

# Discretionary Review Request

In the space below and on separate paper, if necessary, please present facts sufficient to answer each question.

1. What are the reasons for requesting Discretionary Review? The project meets the minimum standards of the Planning Code. What are the exceptional and extraordinary circumstances that justify Discretionary Review of the project? How does the project conflict with the City's General Plan or the Planning Code's Priority Policies or Residential Design Guidelines? Please be specific and site specific sections of the Residential Design Guidelines.

Solar Townhouses (5) solar heat systems will be 50% less power in the winter (see shade study & architect descriptions of solar system-

2. The Residential Design Guidelines assume some impacts to be reasonable and expected as part of construction. Please explain how this project would cause unreasonable impacts. If you believe your property, the property of others or the neighborhood would be adversely affected, please state who would be affected, and how:

Financial burden to 5 Sun House neighbors who rely on passive solar heat supplemented by electrical heat in winter. About 50% less solar power (hours of sun) in winter (shade study)

3. What alternatives or changes to the proposed project, beyond the changes (if any) already made would respond to the exceptional and extraordinary circumstances and reduce the adverse effects noted above in question #1?

Third story / building height reduced to allow solar heat to function.
All articles on solar heat system attached were given to 1040 Broderick owner & architects following first meeting. Shade study by architects followed. Despite loss of solar power revealed by shade study, no alterations proposed in subsequent meeting or follow up emails.

13.0959D

4. Actions Prior to a Discretionary Review Request

| Prior Action | YES | NO |
|---|---|---|
| Have you discussed this project with the permit applicant? | ☒ | ☐ |
| Did you discuss the project with the Planning Department permit review planner? | ☒ | ☐ |
| Did you participate in outside mediation on this case? | ☐ | ☒ |

5. Changes Made to the Project as a Result of Mediation.

If you have discussed the project with the applicant, planning staff or gone through mediation, please summarize the result, including any changes there were made to the proposed project.

Plans for the top floor have not changed after 2 meetings with applicant and architects. Consult w. planning staff by phone. (Sun House members)

13.0959D

# Applicant's Affidavit

Under penalty of perjury the following declarations are made:
a: The undersigned is the owner or authorized agent of the owner of this property.
b: The information presented is true and correct to the best of my knowledge.
c: The other information or applications may be required.

Signature: [signature] Date: July 14, 2013

Print name, and indicate whether owner, or authorized agent:

Leslie Donaldson, President, Sun House Association,
Owner / Authorized Agent (circle one)
(1965, 1973, 1981, 1989, 1997 Eddy St.)

Application for **Discretionary Review**

CASE NUMBER: 13.0959D

# Discretionary Review Application Submittal Checklist

Applications submitted to the Planning Department must be accompanied by this checklist and all required materials. The checklist is to be completed and **signed by the applicant or authorized agent.**

| REQUIRED MATERIALS (please check correct column) | DR APPLICATION |
|---|---|
| Application, with all blanks completed | ☐ |
| Address labels (original), if applicable | ○ |
| Address labels (copy of the above), if applicable | ○ |
| Photocopy of this completed application | ☐ |
| Photographs that illustrate your concerns | |
| Convenant or Deed Restrictions | |
| Check payable to Planning Dept. | ☐ |
| Letter of authorization for agent | ☐ |
| Other: Section Plan, Detail drawings (i.e. windows, door entries, trim), Specifications (for cleaning, repair, etc.) and/or Product cut sheets for new elements (i.e. windows, doors) | |

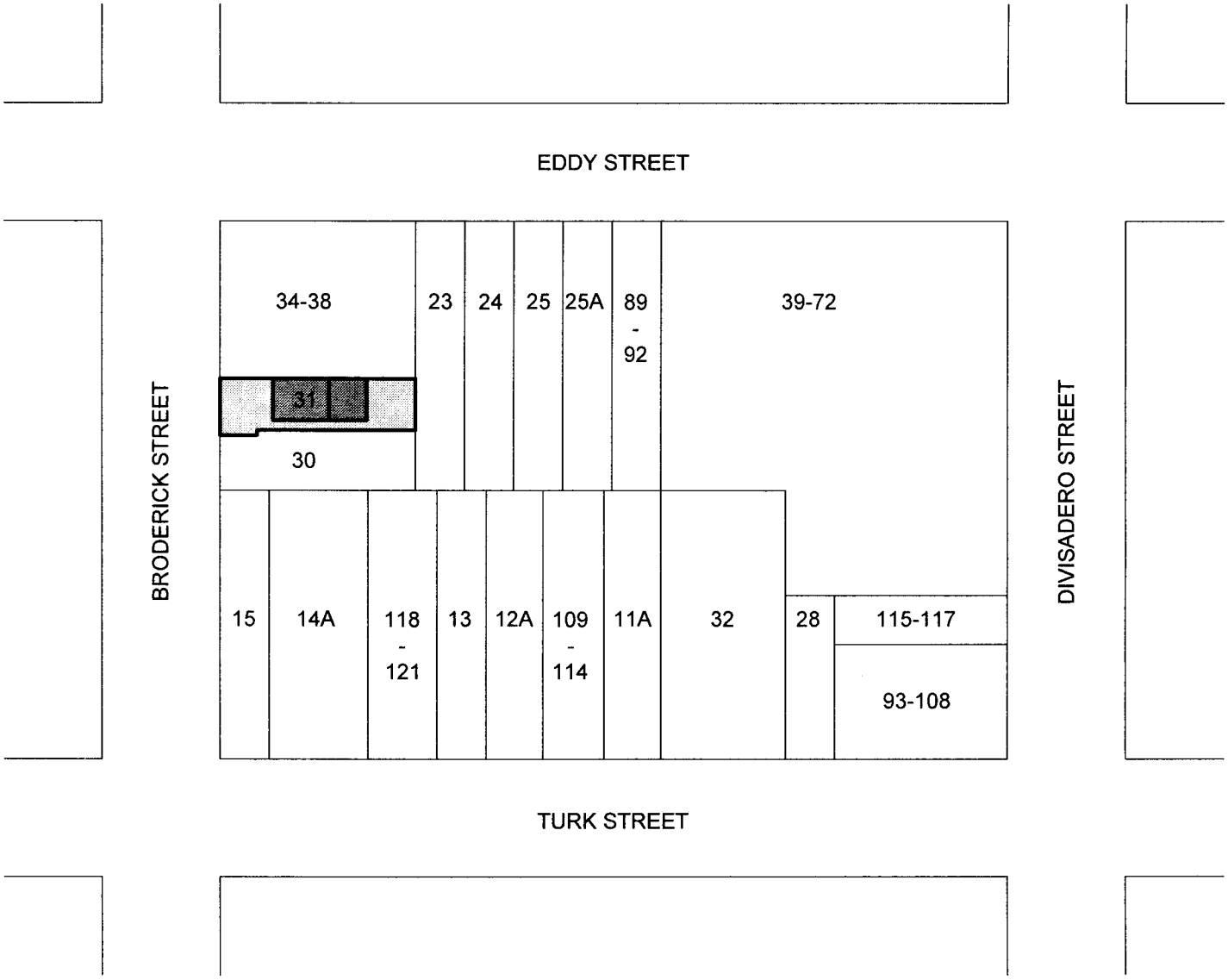
NOTES:
☐ Required Material.
Optional Material.
○ Two sets of original labels and one copy of addresses of adjacent property owners and owners of property across street.

For Department Use Only
Application received by Planning Department:

By: _____ Date: _____

13.0959D

# LOCATION MAP




# SHEET INDEX

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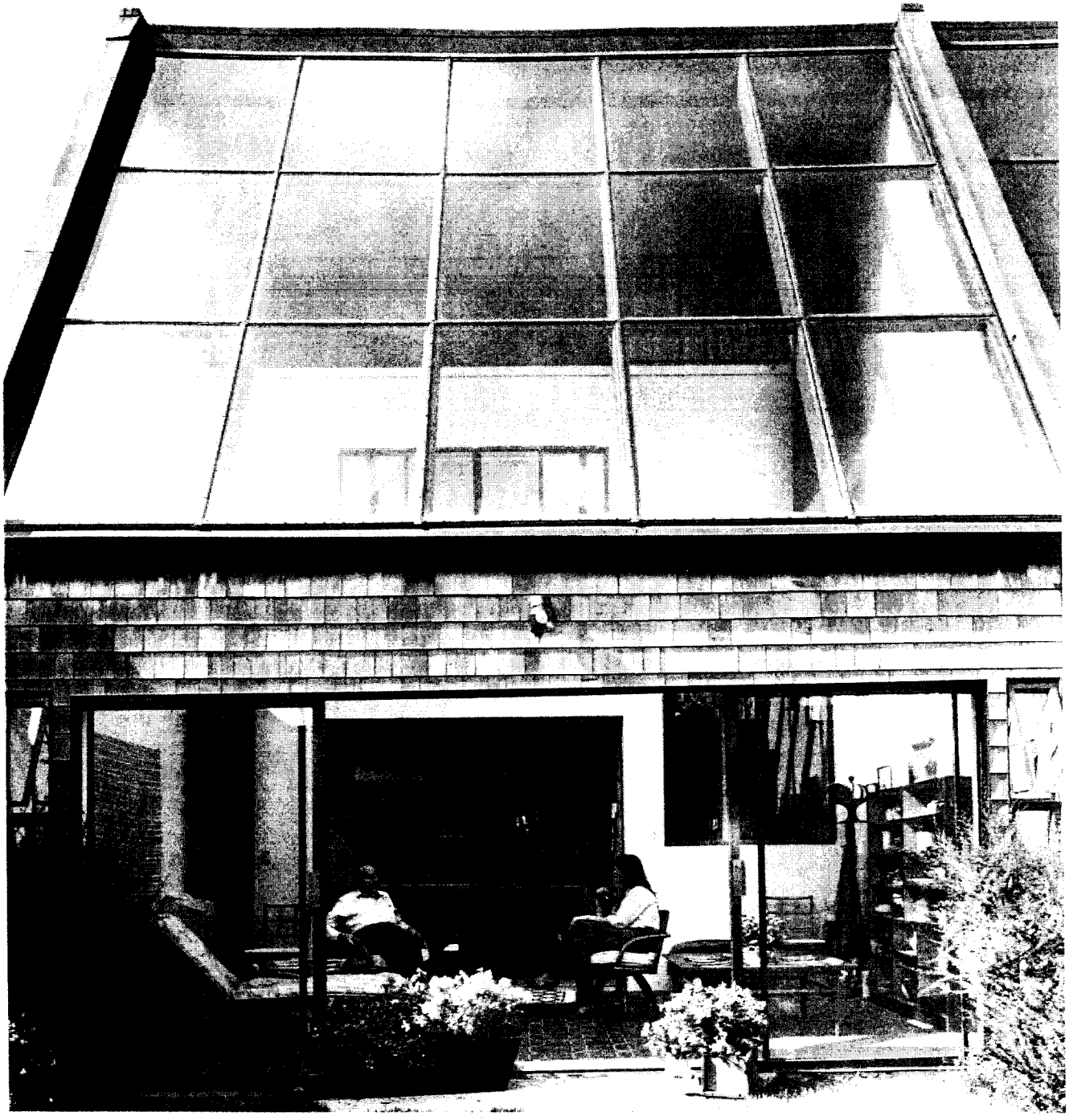
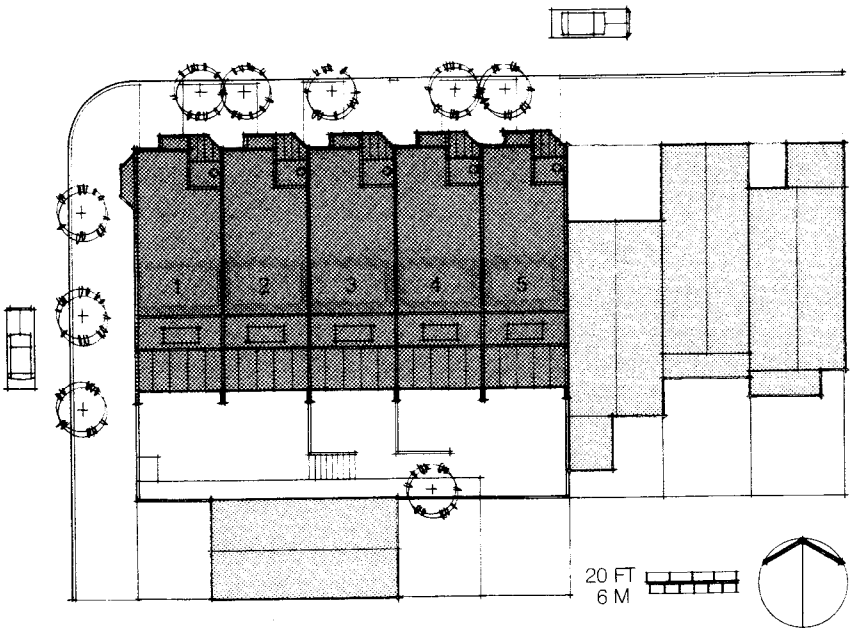


# SUNHOUSE COMPLEX: San Francisco, California



Mass housing is eminently suitable for passive solar designs, as these elegant solarium townhouses demonstrate. Sunhouse Complex, San Francisco, California.

Open three-story solarium is the focal point for each townhouse. Sunhouse Complex.



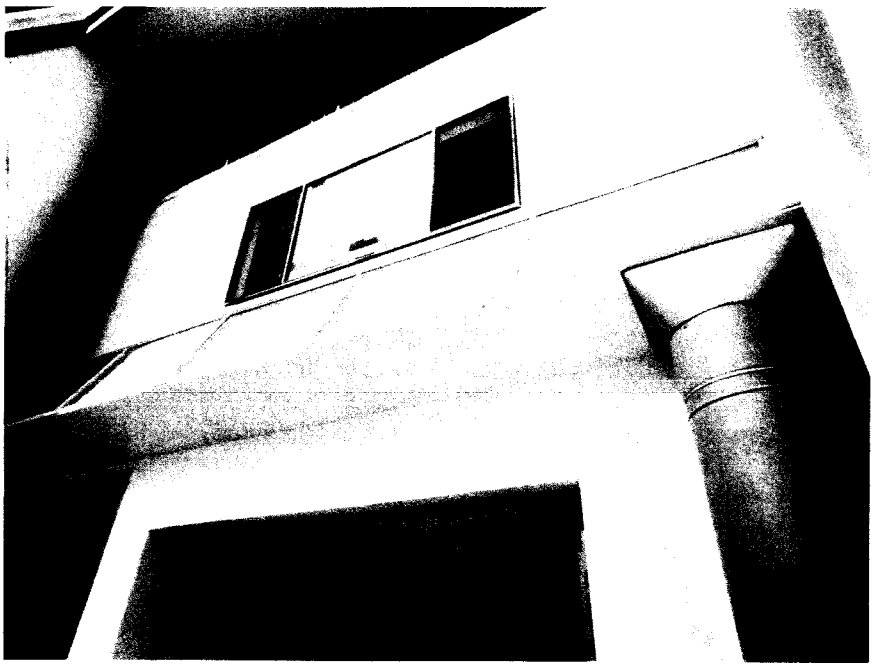

Site plan

Mass housing is often the only cost-effective dwelling option in urban and suburban communities, and the application of passive solar design principles to this important type of building has been slow. The bureaucratic stumbling blocks to implementation are numerous and inhibiting; building departments, government agencies, finance institutions, trade unions, and others are not responsive to innovation in this housing type. Also, the complexities of creating designs appropriate to the urban landscape are in themselves difficult. Coming up with a passive solar solution for this size project is doubly difficult. Consequently, the adventurous developer undertaking the challenge of building a passive solar housing project must be prepared to put forth a little more effort to succeed.

Zoe Works Architects of San Francisco worked with their client through the bureaucratic maze. The beauty of this complex is that it steps down a city hillside, gathering solar energy without compromising the public or private aspects of each family unit. The result is well worth the effort. This attractive complex boasts energy performance that may well become required standards for new buildings.

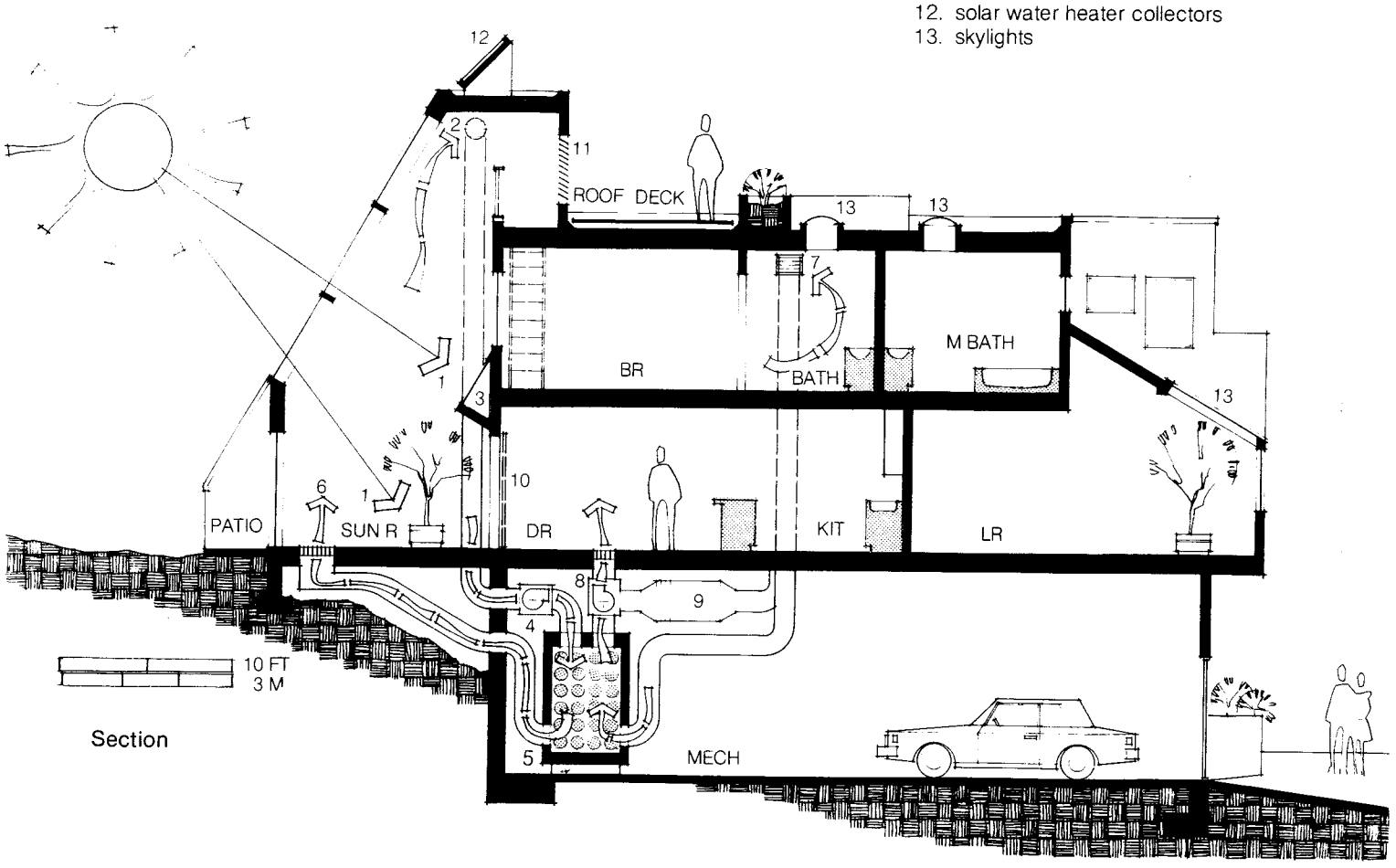
## From the Architect

The Sunhouse project evolved from the outset as an opportunity to demonstrate the potential for passive solar space heating in an urban setting. The owner/developer's objectives were twofold: to develop a project that would be compatible with the family-oriented neighborhood, and to effectively utilize solar energy and energy-conscious designs. The project is located in the Western Addition Redevelopment Agency of San Francisco and, as such, had to meet the various requirements of that agency. Specifically, we had to gain neighborhood approval and win agency selection over several other developers



Detail of solar "super heater." Sunhouse Complex.

1. winter solar gain
2. warm air to thermal storage
3. solar super heater
4. fan to charge thermal storage
5. phase-change thermal storage bin
6. air from thermal storage
7. interior warm air to thermal storage
8. fan to heat unit
9. conventional heating unit
10. insulating shutter
11. exhaust vent
12. solar water heater collectors
13. skylights




Section

the code's ventilation provisions require. Here, we showed that the two back rooms would receive adequate fresh air from the greenhouse, supplied directly through operable dampers in the glazing. The third code problem was the heat-storage unit of phase-change thermal material. The code contained no standards for such a storage arrangement. The phase-change thermal mass has a storage capacity adequate to supply the heating needs of each unit for four successive sunless days. However, the project owner had to agree to provide the townhouses with gas-fired or electric furnaces capable of handling the full heat load of each building, regardless of stored solar energy.

The final design centers around a large greenhouse in each townhouse unit. The attached greenhouse faces south at the rear of each unit and serves as solar heat collector, cooling ventilator, and usable indoor space. The sloping facade creates a large ground-to-roof enclosure to which the doors and windows of the two main levels open.

Solar radiation heats the walls and paving during the day. Excess heat is drawn by convection directly into the living areas, or by fans to the underground phase-change thermal storage, after first passing through a solar "super heater" (a collector area inside the greenhouse that increases the return-air temperature). At night, heat in the solarium's thermal mass reradiates directly to the space, while stored heat is drawn from the remote thermal storage bin to heat interior spaces on demand.

The system is operated by thermostatic controls. A differential thermostat switches on the hot-air intake fan when the temperature in the solarium reaches 10°F (5.5°C) higher than the temperature in the thermal storage unit, thus drawing air from the solarium to the storage area. In each unit, another thermostat switches on a second fan when the temperature falls to the comfort level set by the individual user, drawing warm air from the storage area to the interior. When the heat capacity in storage is depleted, the conventional heating unit automatically switches on, supplying the heating needs until no longer required or until the storage supply is replenished.

The summer cooling mode uses convection currents in the solarium to provide cool air to the living area. Again, outside air is continuously drawn into the solarium and the interior spaces through glazed openings. Hot air is then vented from the top of the solarium. This enables cool, fresh air to be continually drawn in, even on days with stagnant air.

## From an Inhabitant

Living in Sunhouse produces some pleasurable surprises. Our initial discovery was that the solarium is very appealing at night. The glass provides a closed environment which allows for a pleasant moonlit patio setting on a cool evening, so very typical of San Francisco. We discovered that the three-story space allows for elegant entertaining, especially larger parties, for the scale of the room creates an open feeling. The tile floor provides a wonderful dance floor, and the heavy insulation is an extra bonus as a barrier against city noises. This is immediately apparent upon entering Sunhouse: you suddenly realize you are in an environment of complete peace and tranquility. This is further validated when you enter the solarium and have a private garden along a glass wall; the feeling it evokes is captivating. Daytime living is still the primary pleasure and, due to our irregular job hours, we are lucky enough to enjoy the house during the sunny hours. We often open the doors of the solarium and indulge ourselves in lounging around, reading, and acquiring a tan in delightful comfort.

The energy performance is great. We leave the thermostat at a decadent 70° (21.1°C) all year round. We use natural gas as a backup system for the central heat and hot water. These work automatically and with minimal expense. The gas portion of the utility bill is below the "lifeline" level created by our local utility for minimal users. This is true for all five owners in the development.

One of the more extraordinary experiences we have had repeatedly is observing the extreme caution people take when exposed to some of the innovative details in our house. It is as if they are looking at some new horseless carriage. Some people want to be reassured that the whole place won't blow up if someone pushes the wrong button. When visitors see all the ducts converging into the heat storage box, they usually approach the area as if it were radioactive. Even the water heaters are treated as if they have acquired a space-age status. Actually, it is fun to watch.

Multi-Housing News
A CAHNERS PUBLICATION
FOR APARTMENT / TOWNHOUSE / CONDOMINIUM BUILDERS ■ SEPTEMBER 1980

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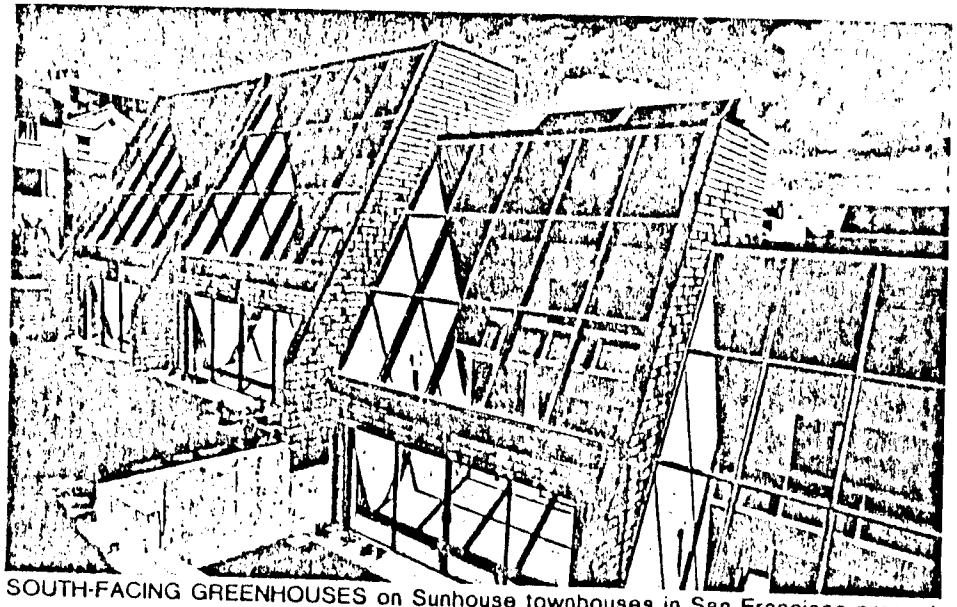


SOUTH-FACING GREENHOUSES on Sunhouse townhouses in San Francisco present 406 sq. ft. of glazing at an angle perpendicular to the noon sun on December 31. The passive system is expected to provide over 70 percent of the heating load for the $200,000 units.

# Urban Passive Solar Units Provide Heat Automatically

**By Todd Zimmerman, Executive Editor**

San Francisco—At five new townhouses here passive solar heating is controlled by a central microprocessor.

This contrasts with many passive solar dwellings where occupants must regulate vents, open and close thermal drapes and adjust sunscreens for the system to work.

"In designing our Sunhouse units our criterion was to minimize the effort required of the residents," said Garth Collier, principal of Zoe Works, the project architect.

The 2,000-sq.-ft. units sold for between $220,000 and $245,000.

The townhouses sit on an 80 x 100 ft. corner lot near the top of a hill in a redevelopment area. The designer, James

*Continued on page 34. . .*

# Solar Controls Simple

*...inued from page 1 . . .*

Delameter, bought the site from the redevelopment agency for $22,500.

Delameter had to sell the agency on the solar concept. The agency favored more conventional apartments.

The major problem, however, was the city's plumbing code. The passive solar system designed by architect Collier with Solergy, Inc., San Francisco-based solar consultants, used a solarium as the solar collector.

"The building code was simply not set up to deal with a passive solar project," Collier said.

The greenhouse collector, which rises three stories from grade level and covers the entire southern exposure of the unit, caused the code problems.

The building inspector noted that a habitable greenhouse violates the building code. He also pointed out that the unit's southern rooms had no direct exterior ventilation, but opened onto the greenhouse space instead.

Delameter and Collier appealed to the city's Board of Building Examiners for exemptions from the building code. Support came from the mayor's office, the city planning department and the local chapter of the A.I.A.

The design was approved by the board, but Delameter was required to provide a conventional heating system that could handle the full heating load.

Delameter noted that while construction took a relatively long 1½ years, regulatory hang-ups were even longer—about two years.

The townhouse design takes advantage of the site's hillside orientation, almost due south. The units have northern frontage so that the greenhouse collectors cover the rear of the townhouses.

A glass wall rises vertically from grade level in the rear of each unit, which is one story above grade on the street elevation. The vertical wall ends after one story and special glazing continues for two more stories at a 60-degree angle.

The three-story space enclosed by this glazing can be isolated from the rest of the unit by doors and windows. The slanted portion of the greenhouse provides 406 sq. ft. of collector surface.

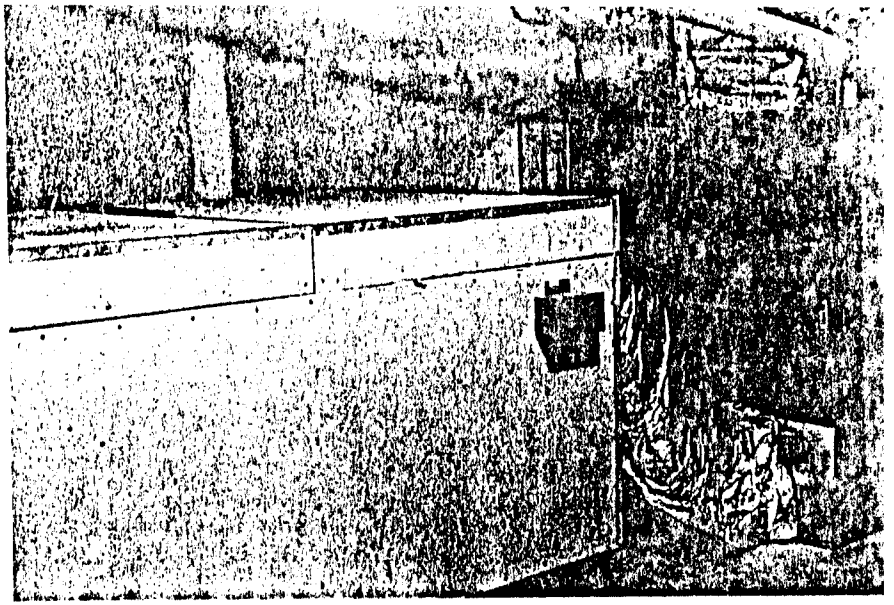
The floor of the greenhouse space is a four-inch concrete slab above wood joists. There is a crawl-space beneath.

**Phase-Change Storage**

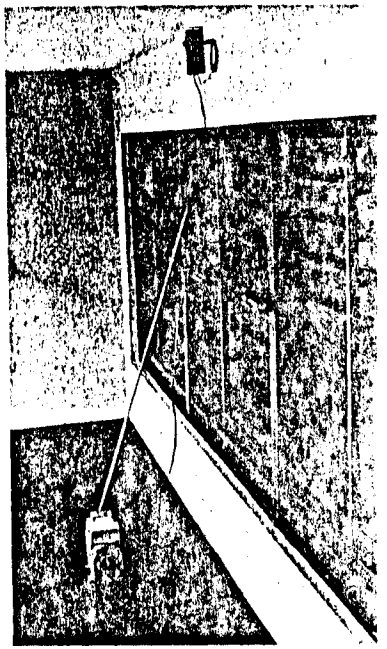
The heat collected in the greenhouse is stored using eutectic salts as a medium. Eutectic salts store or release heat as the substance changes phase from solid to liquid and back again. This storage medium can obtain a relatively large amount of heat in a small space.

The salts are sealed in vinyl bags and arranged on trays in a container fabricated of wall board. The storage container, with the rest of the HVAC equipment, is in the garage of the townhouse—one level lower than the floor of the greenhouse. Simple metal ductwork connects the storage medium with the greenhouse and the back-up forced-air system.

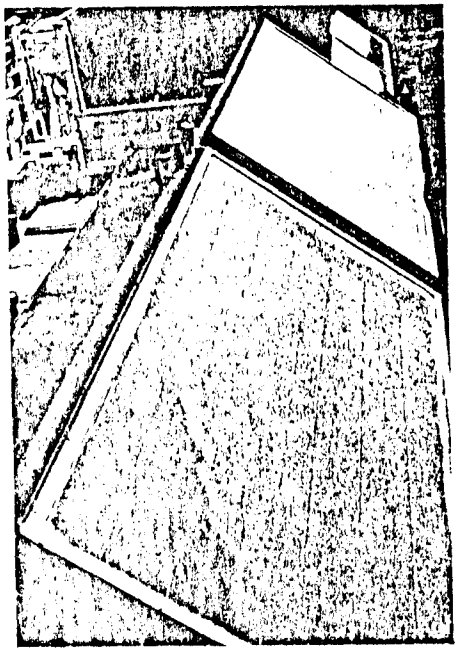
The key to the entire system, however, is the fist-sized black box that controls it. Using sensors located throughout the unit, a microprocessor controls the vents and fans that make the heating effective. A monitor located in the dining room of each unit displays the temperatu various parts of the system at the a button.

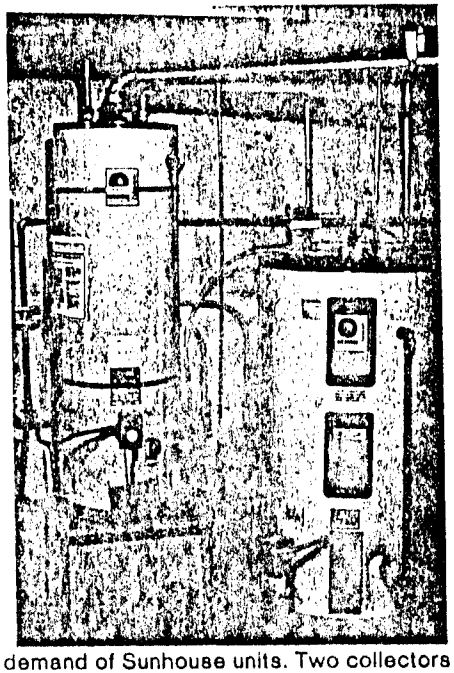


EUTECTIC SALT STORAGE is housed in a container fabricated of wallboard phase-change medium can store a relatively great amount of heat in a small vo



VENTILATION of the greenhouse tor is handled by automatically op louvers near the top of the str Venting would be necessary to heat gain during the summer mon





SOLAR HOT WATER further reduces energy demand of Sunhouse units. Two collectors per unit feed an 82-gallon storage tank to handle 80 percent of hot water need. Back-up

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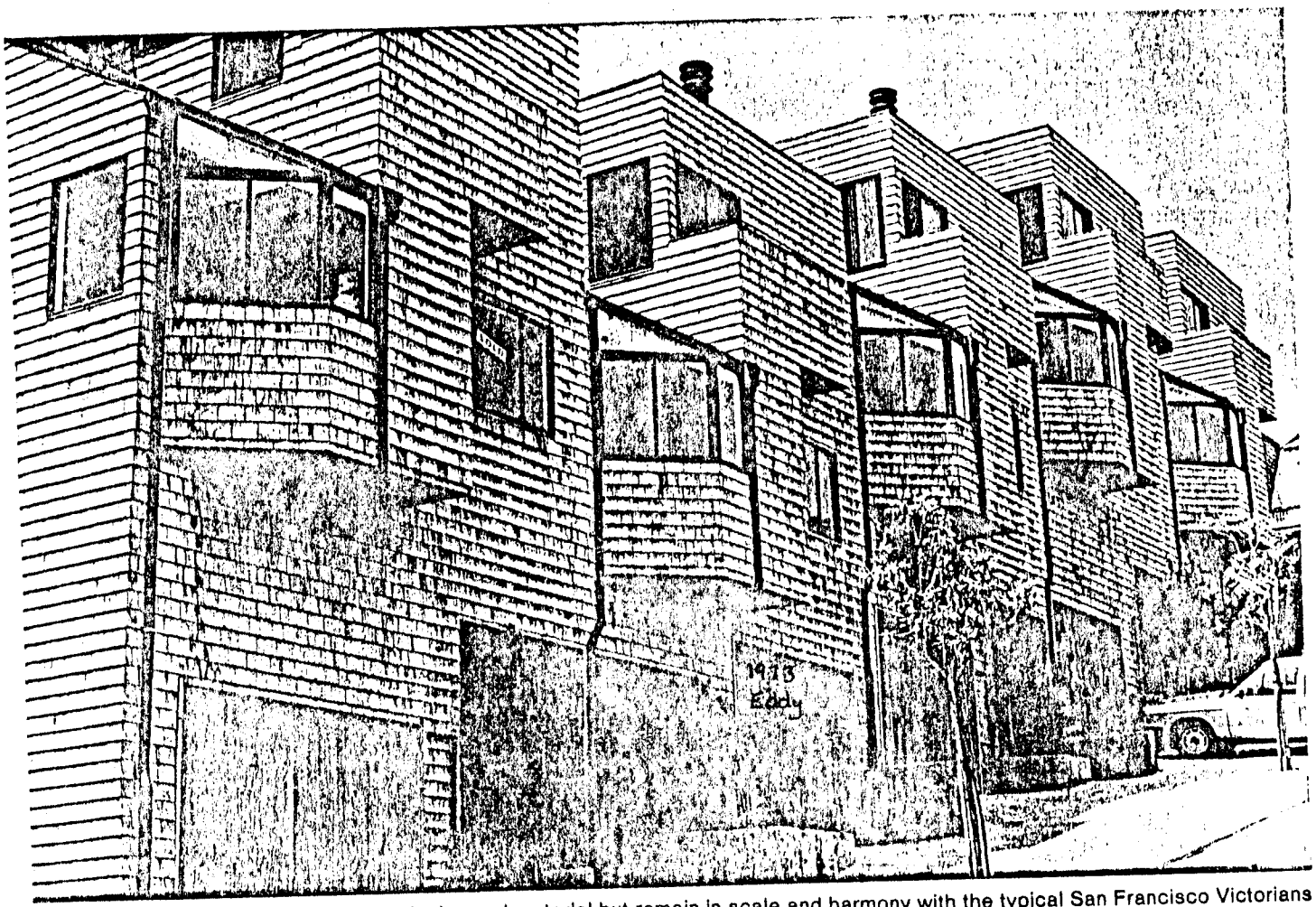



TOWNHOUSE FACADES use modern design and material but remain in scale and harmony with the typical San Francisco Victorians in the neighborhood. Projecting bays indicate grade level at units' rear yards.

Fresh air is allowed to enter the system through ground-level vents just below the greenhouse. Air can be vented from the system through louvers on the third level of the greenhouse space.

In order to keep the heat levels in the greenhouse tolerable, the hot air collected at the top of the space is boosted another five to 10 degrees just before it enters the storage medium. A supercharger, which is a sort of collector-within-a-collector, provides the additional temperature.

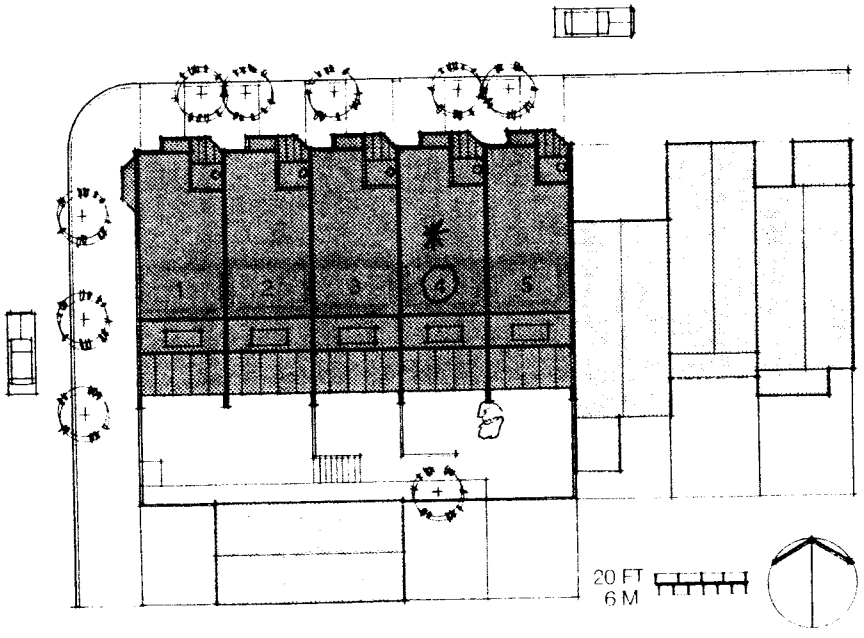
Heated air is blown into the storage medium whenever the temperature at the top of the greenhouse exceeds the storage temperature by 10 degrees. Collier calculates that the storage supply will last through four cloudy days. When stored heat is depleted, the back-up system automatically fires.

A two-collector array on the unit's roof provides solar hot water, with a back-up system provided.

Collier predicts that the Sunhouse system will privide 70 to 85 percent of the unit's space heating and hot water needs.

The units, which have two bedrooms, 2½ baths and a two-car garage, sold quickly, but not quickly enough for developer Delameter who was saddled with a $600,000 construction loan at two points above prime through much of the project's delays. □


Open three-story solarium is the focal point for each townhouse. Sunhouse Complex.




Site plan

Mass housing is often the only cost-effective dwelling option in urban and suburban communities, and the application of passive solar design principles to this important type of building has been slow. The bureaucratic stumbling blocks to implementation are numerous and inhibiting; building departments, government agencies, finance institutions, trade unions, and others are not responsive to innovation in this housing type. Also, the complexities of creating designs appropriate to the urban landscape are in themselves difficult. Coming up with a passive solar solution for this size project is doubly difficult. Consequently, the adventurous developer undertaking the challenge of building a passive solar housing project must be prepared to put forth a little more effort to succeed.

Zoe Works Architects of San Francisco worked with their client through the bureaucratic maze. The beauty of this complex is that it steps down a city hillside, gathering solar energy without compromising the public or private aspects of each family unit. The result is well worth the effort. This attractive complex boasts energy performance that may well become required standards for new buildings.

## From the Architect

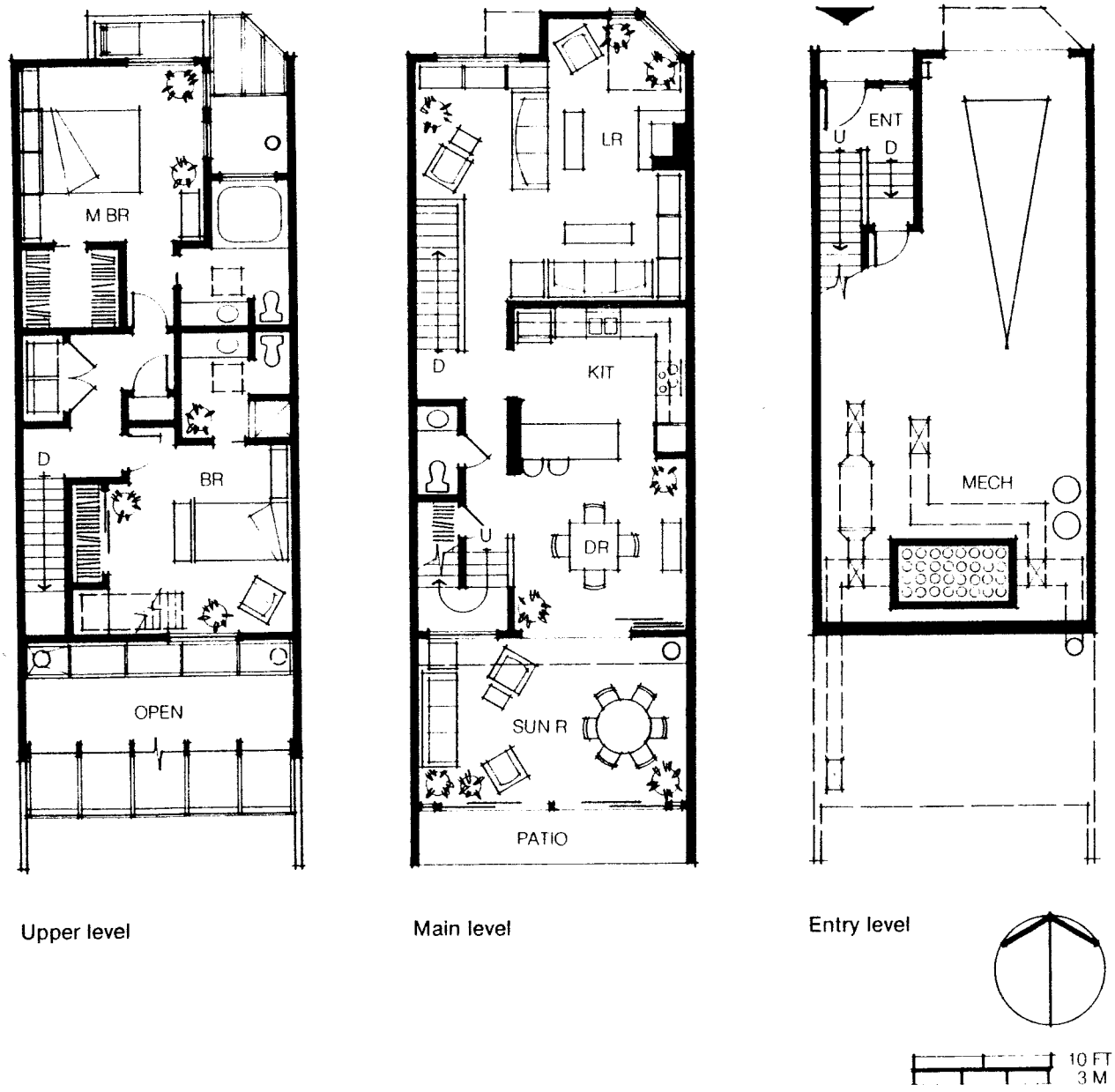
The Sunhouse project evolved from the outset as an opportunity to demonstrate the potential for passive solar space heating in an urban setting. The owner/developer's objectives were twofold: to develop a project that would be compatible with the family-oriented neighborhood, and to effectively utilize solar energy and energy-conscious designs. The project is located in the Western Addition Redevelopment Agency of San Francisco and, as such, had to meet the various requirements of that agency. Specifically, we had to gain neighborhood approval and win agency selection over several other developers

who submitted more conventional proposals.

Our design philosophy evolved from the needs of urban dwellers—their life patterns and space requirements. This philosophy is summarized as "maximum solar utilization with minimum user involvement." Most urban dwellers are not available to manually monitor, adjust, and control solar systems. Generally, they leave in the morning, not returning until the evening. They take frequent vacations, ranging from long weekends to several weeks. Cognizant of these factors, we designed a system which would typically require no more effort to operate than setting the thermostat, yet could be manually adjusted if necessary.

In an urban environment, the conditions which restrict solar design, particularly passive solar design, are usually more acute than in rural or suburban locations. The factors of limited site, solar access, proximity and character of existing buildings, older and more restrictive building regulations, existing facilities, and high labor costs were critical design considerations for this urban project.

The hillside site, with its good solar exposure, was ideal. Our design ob-




Upper level

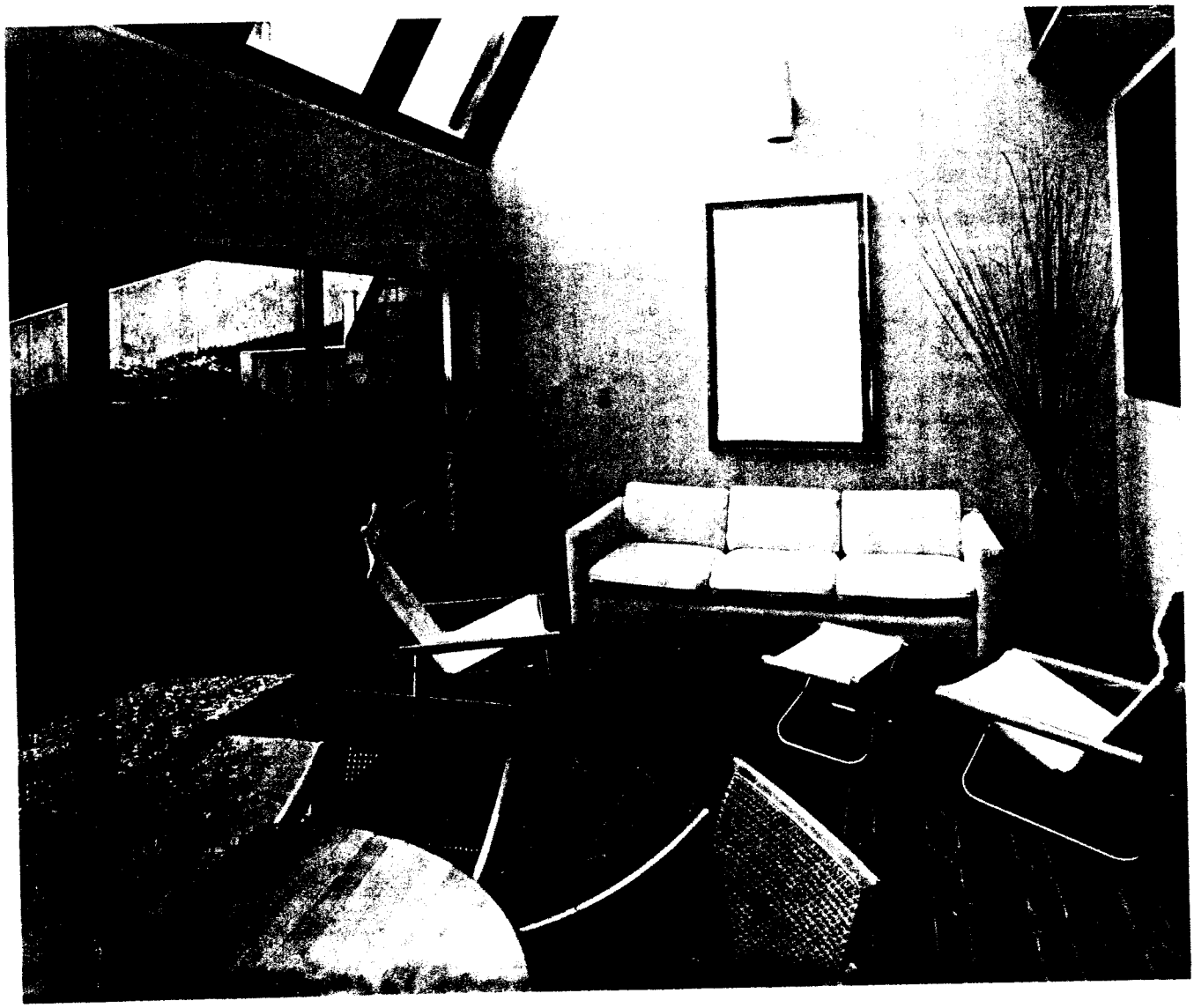
Main level

Entry level

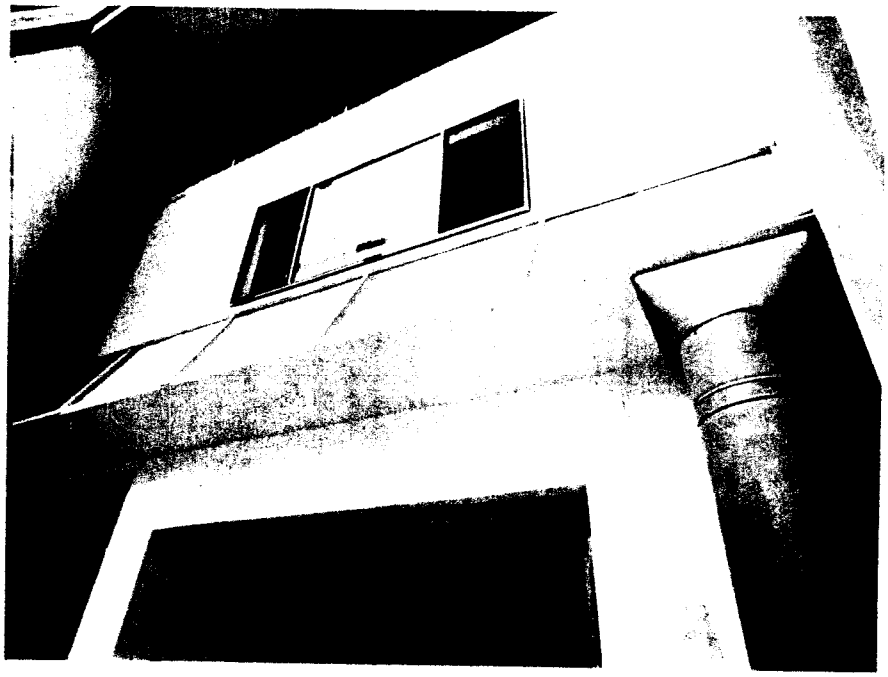
jectives were to create a building configuration and shape reflective of its use and functions, yet expressive of the architectural heritage of the Bay Area. By sloping the south-facing solarium glass wall and the side enclosure walls at sixty degrees, we emphasized the optimum winter sun angle. The bay windows, exterior wood shingles, and the interplay of building volumes on the north facade are to provide an interesting visual effect and to identify with the local architectural character.

The San Francisco Building Department's principal objective in regulating solar projects has been to insure that the equipment conformed to the city's well-regarded plumbing code. Since architectural components themselves, rather than conventional heating and cooling equipment, would supply the thermal needs of Sunhouse Complex, the city found its building code was inadequate to deal with a passive solar project. Engineering evidence proved that a passive design employing greenhouses or solariums with thermal storage could provide most of the heating needs and nearly all the cooling needs naturally.

However, the building inspector considered the greenhouse a habitable space, which violated the building code. We successfully argued that the greenhouse-enclosed patio was really a solarium, which the code permits to be used for living purposes. In addition, the southern rooms of the building open into the greenhouse, instead of directly to the exterior, as

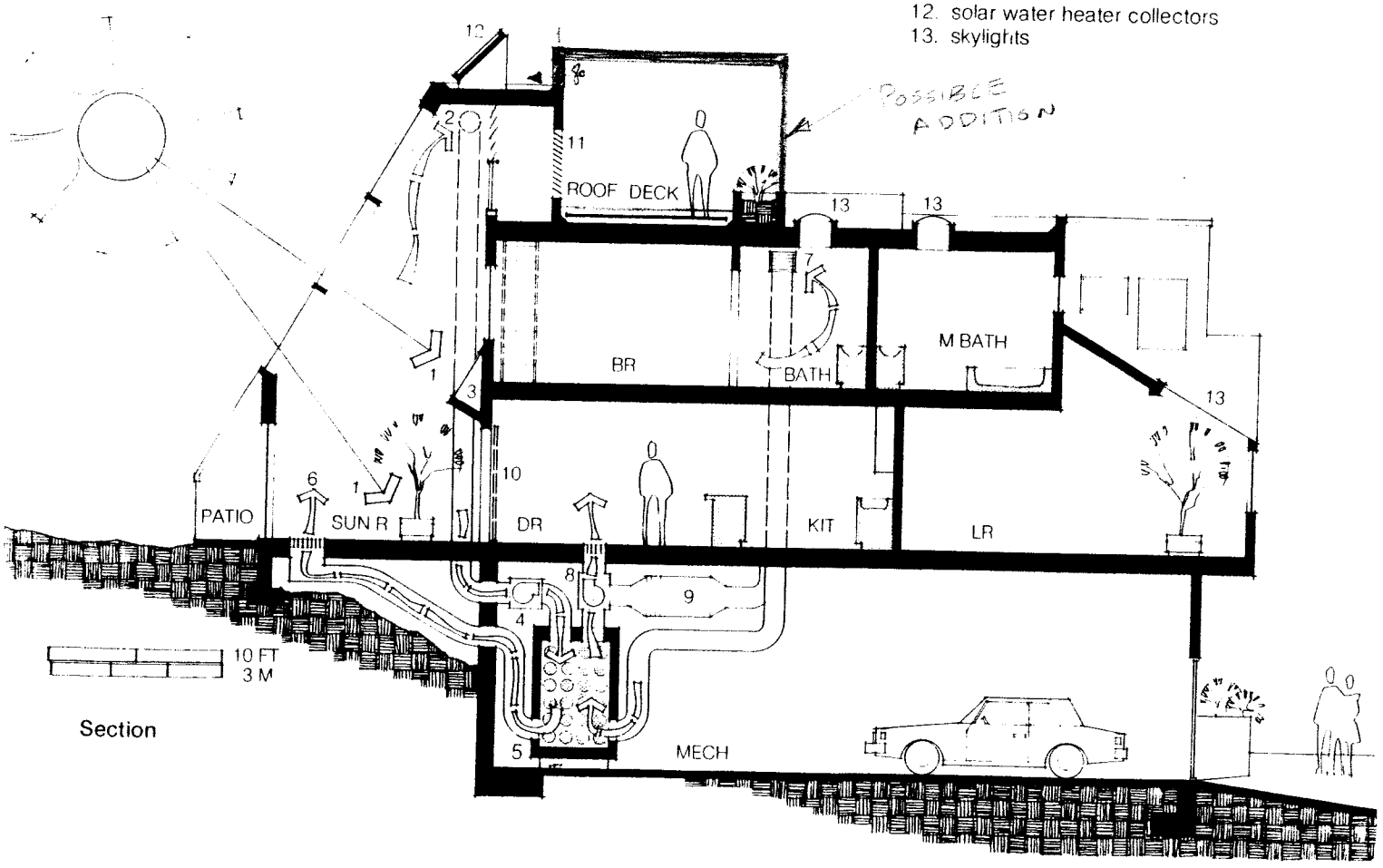


Sunspaces epitomize indoor/outdoor living. Sunhouse Complex.



Detail of solar "super heater." Sunhouse Complex.

1. winter solar gain
2. warm air to thermal storage
3. solar super heater
4. fan to charge thermal storage
5. phase-change thermal storage bin
6. air from thermal storage
7. interior warm air to thermal storage
8. fan to heat unit
9. conventional heating unit
10. insulating shutter
11. exhaust vent
12. solar water heater collectors
13. skylights




Section

the code's ventilation provisions require. Here, we showed that the two back rooms would receive adequate fresh air from the greenhouse, supplied directly through operable dampers in the glazing. The third code problem was the heat-storage unit of phase-change thermal material. The code contained no standards for such a storage arrangement. The phase-change thermal mass has a storage capacity adequate to supply the heating needs of each unit for four successive sunless days. However, the project owner had to agree to provide the townhouses with gas-fired or electric furnaces capable of handling the full heat load of each building, regardless of stored solar energy.

The final design centers around a large greenhouse in each townhouse unit. The attached greenhouse faces south at the rear of each unit and serves as solar heat collector, cooling ventilator, and usable indoor space. The sloping facade creates a large ground-to-roof enclosure to which the doors and windows of the two main levels open.

Solar radiation heats the walls and paving during the day. Excess heat is drawn by convection directly into the living areas, or by fans to the underground phase-change thermal storage, after first passing through a solar "super heater" (a collector area inside the greenhouse that increases the return-air temperature). At night, heat in the solarium's thermal mass reradiates directly to the space, while stored heat is drawn from the remote thermal storage bin to heat interior spaces on demand.

The system is operated by thermostatic controls. A differential thermostat switches on the hot-air intake fan when the temperature in the solarium reaches 10°F (5.5°C) higher than the temperature in the thermal storage unit, thus drawing air from the solarium to the storage area. In each unit, another thermostat switches on a second fan when the temperature falls to the comfort level set by the individual user, drawing warm air from the storage area to the interior. When the heat capacity in storage is depleted, the conventional heating unit automatically switches on, supplying the heating needs until no longer required or until the storage supply is replenished.

The summer cooling mode uses convection currents in the solarium to provide cool air to the living area. Again, outside air is continuously drawn into the solarium and the interior spaces through glazed openings. Hot air is then vented from the top of the solarium. This enables cool, fresh air to be continually drawn in, even on days with stagnant air.

## From an Inhabitant

Living in Sunhouse produces some pleasurable surprises. Our initial discovery was that the solarium is very appealing at night. The glass provides a closed environment which allows for a pleasant moonlit patio setting on a cool evening, so very typical of San Francisco. We discovered that the three-story space allows for elegant entertaining, especially larger parties, for the scale of the room creates an open feeling. The tile floor provides a wonderful dance floor, and the heavy insulation is an extra bonus as a barrier against city noises. This is immediately apparent upon entering Sunhouse: you suddenly realize you are in an environment of complete peace and tranquility. This is further validated when you enter the solarium and have a private garden along a glass wall; the feeling it evokes is captivating. Daytime living is still the primary pleasure and, due to our irregular job hours, we are lucky enough to enjoy the house during the sunny hours. We often open the doors of the solarium and indulge ourselves in lounging around, reading, and acquiring a tan in delightful comfort.

The energy performance is great. We leave the thermostat at a decadent 70° (21.1°C) all year round. We use natural gas as a backup system for the central heat and hot water. These work automatically and with minimal expense. The gas portion of the utility bill is below the "lifeline" level created by our local utility for minimal users. This is true for all five owners in the development.

One of the more extraordinary experiences we have had repeatedly is observing the extreme caution people take when exposed to some of the innovative details in our house. It is as if they are looking at some new horseless carriage. Some people want to be reassured that the whole place won't blow up if someone pushes the wrong button. When visitors see all the ducts converging into the heat storage box, they usually approach the area as if it were radioactive. Even the water heaters are treated as if they have acquired a space-age status. Actually, it is fun to watch.

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## Project Data Summary

### Project Information

Project: Sunhouse Complex
San Francisco, California
Architect: Zoe Works—Garth Collier
San Francisco, California
Builder/developer: Delameter Partnership
San Francisco, California

### Climate Data

| | |
|---|---|
| Latitude | 37.8 °N |
| Elevation | 200 FT (61m) |
| Heating degree days | 3,042 |
| Cooling degree days | 188 |
| Annual percent possible sunshine | 67% |
| January percent possible sunshine | 56% |
| January mean minimum outdoor air temperature | 46°F (7.5°C) |
| January mean maximum outdoor air temperature | 56°F (13.5°C) |
| July mean minimum outdoor air temperature | 53°F (11.5°C) |
| July mean maximum outdoor air temperature | 64°F (17.5°C) |

Climate features: mild, moderate, foggy winters; cool summers

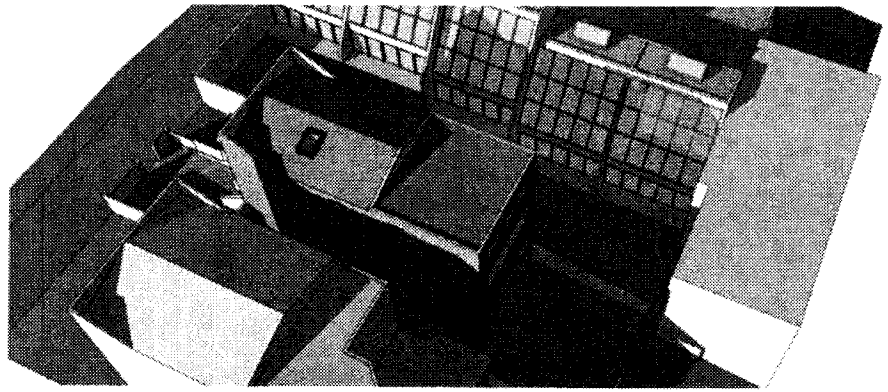
### Building and System Data

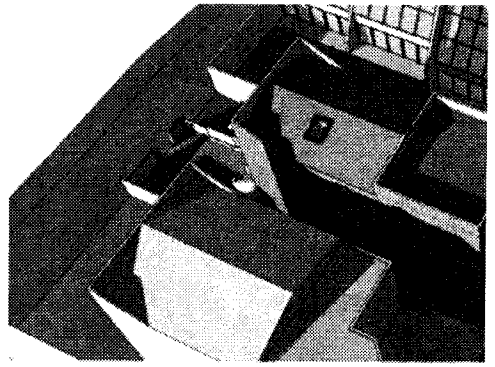
| | |
|---|---|
| Heated floor area | 1,840 $FT^2$ (171 $m^2$) |
| Solar glazing area | |
| Sunspace/per unit | 460 $FT^2$ (42.5 $m^2$) |
| Thermal storage heat capacity | |
| Phase-change rods/per living unit (latent heat) | 254,200 Btu |

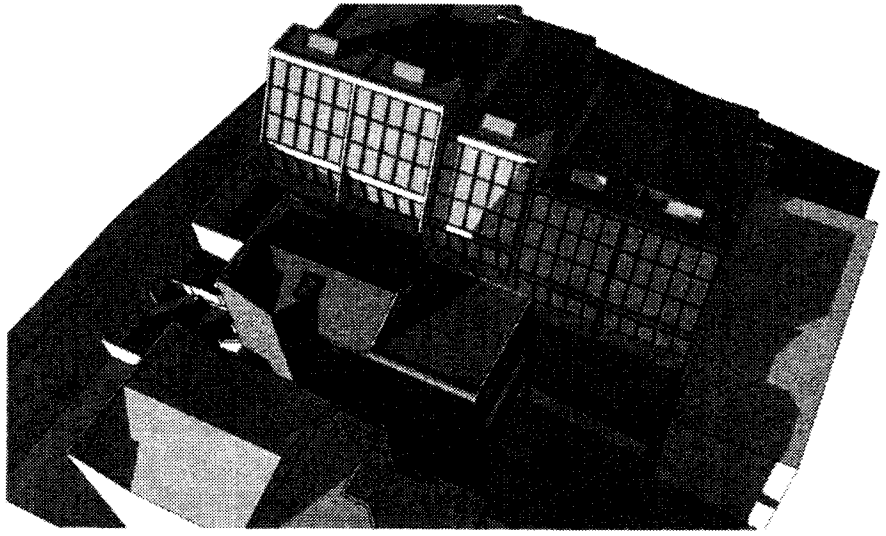
### Performance Data

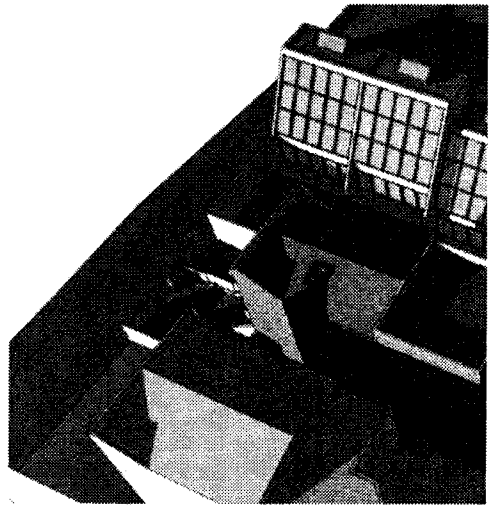
| | |
|---|---|
| Building load factor | 5.8 Btu/DAY°F $FT^2$ |
| Auxiliary energy (heating)/per unit | 1.5 MMBtu/YR |
| Auxiliary energy (cooling)/per unit | 3.2 MMBtu/YR |
| Solar heating fraction/average per unit | 92% |
| Night ventilation cooling fraction/average per unit | 69% |

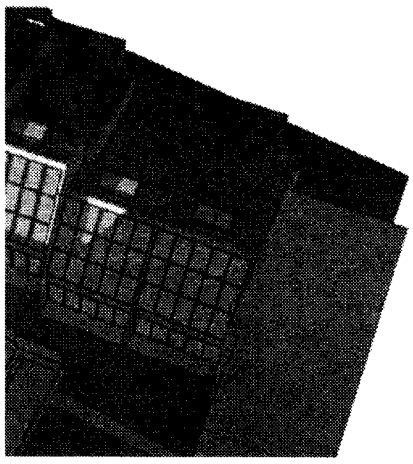
Shade Study

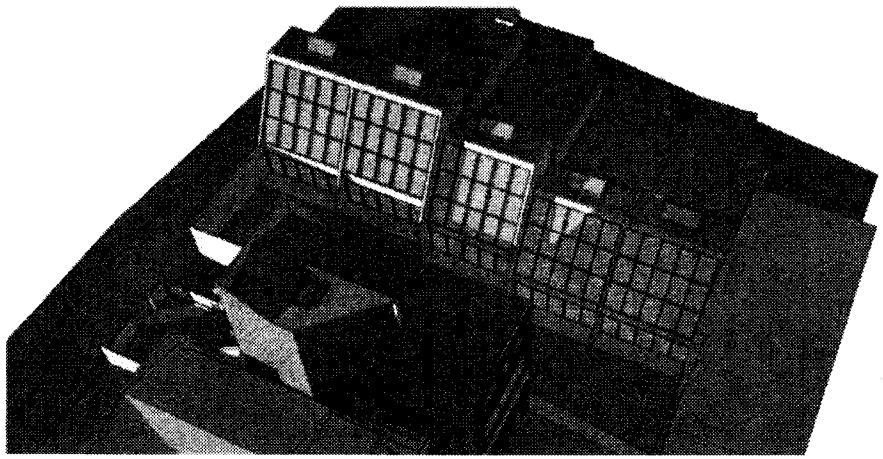


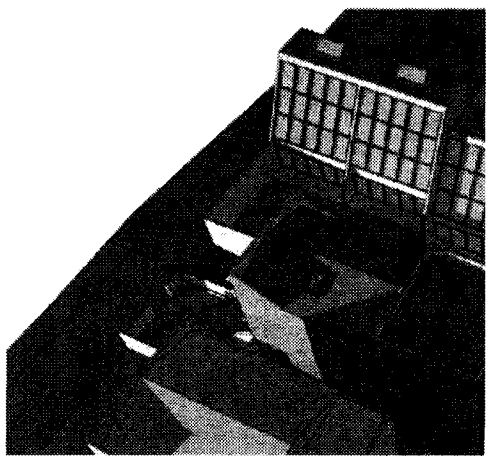


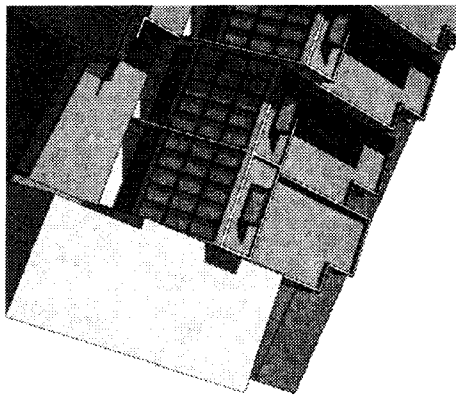
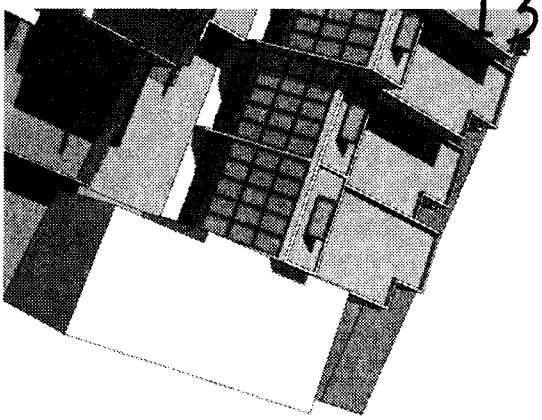
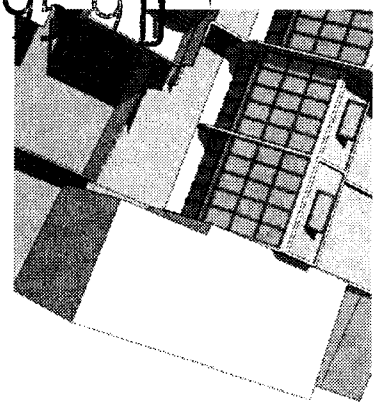
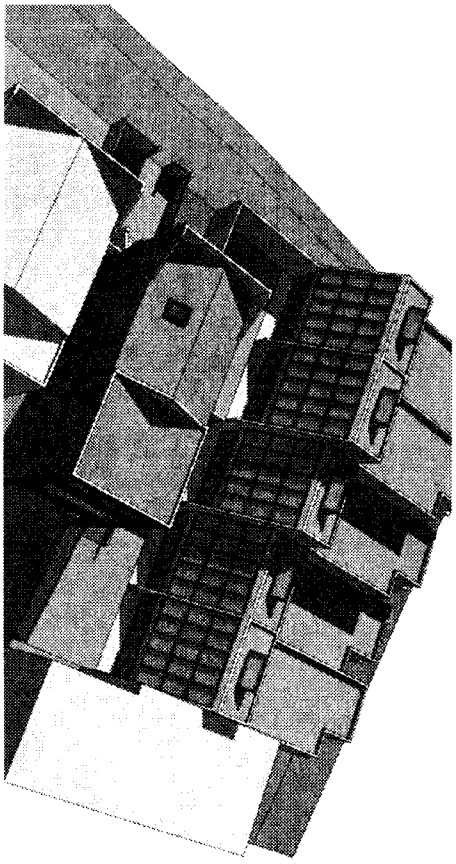
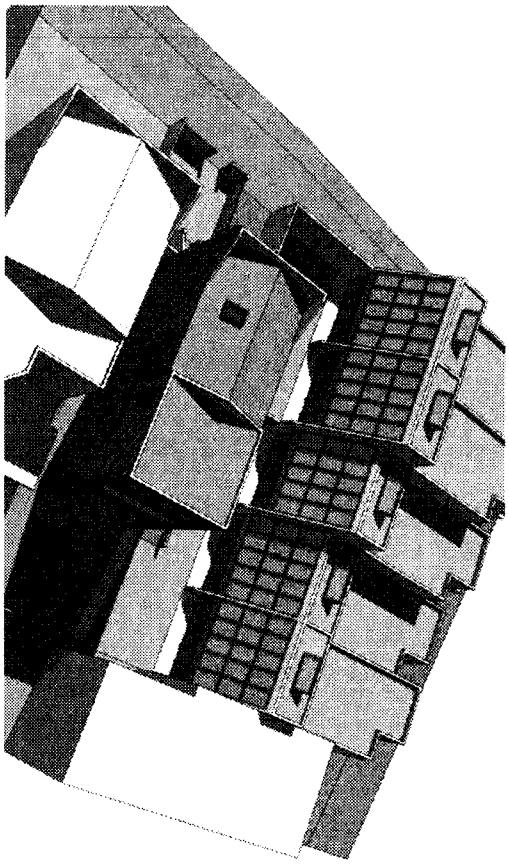
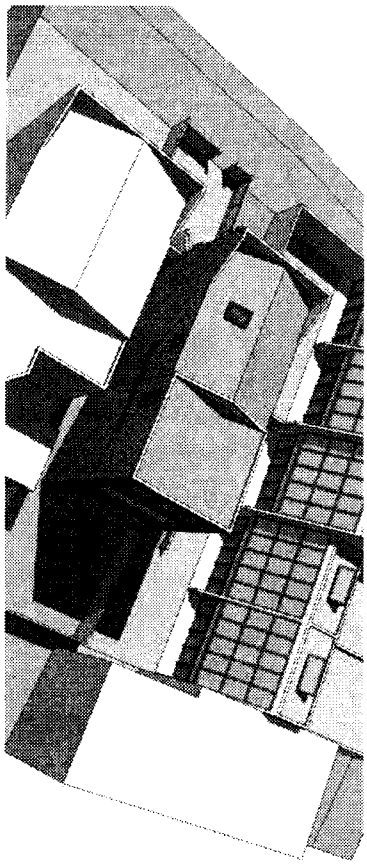
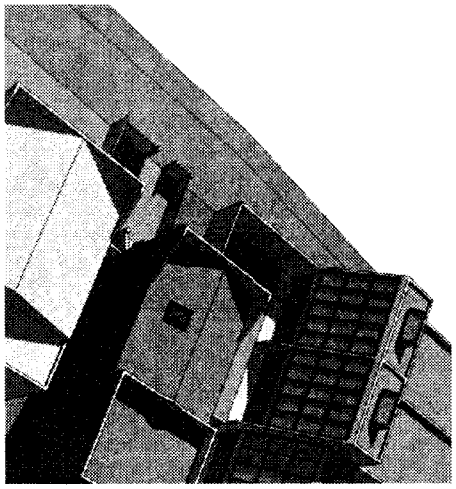
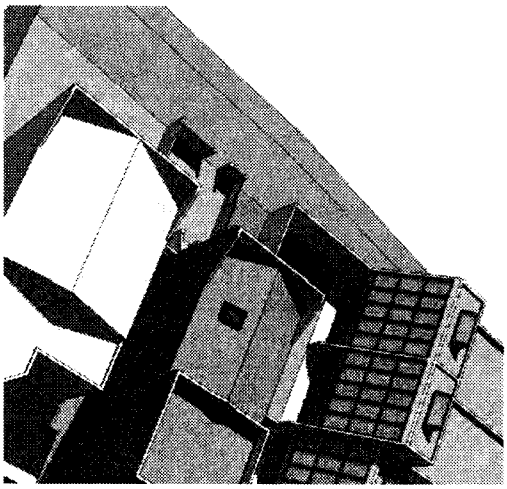
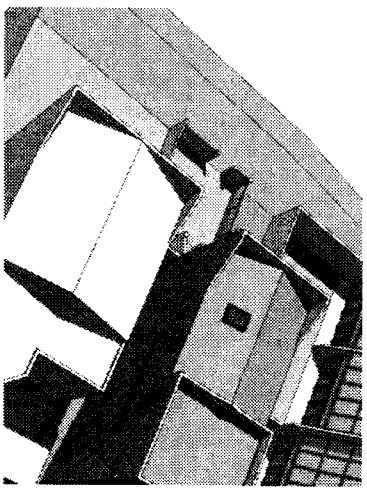


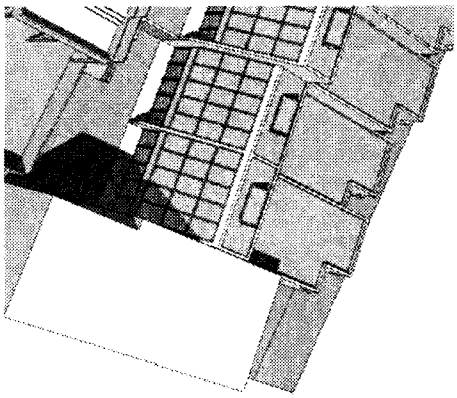


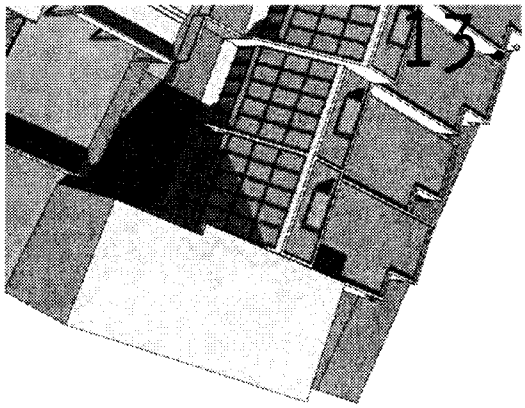


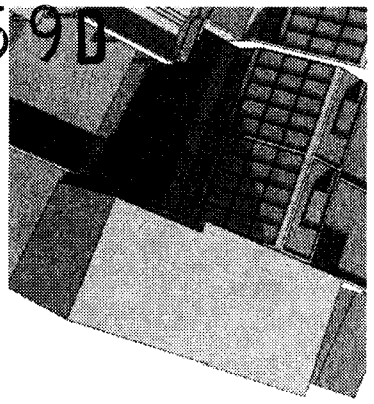


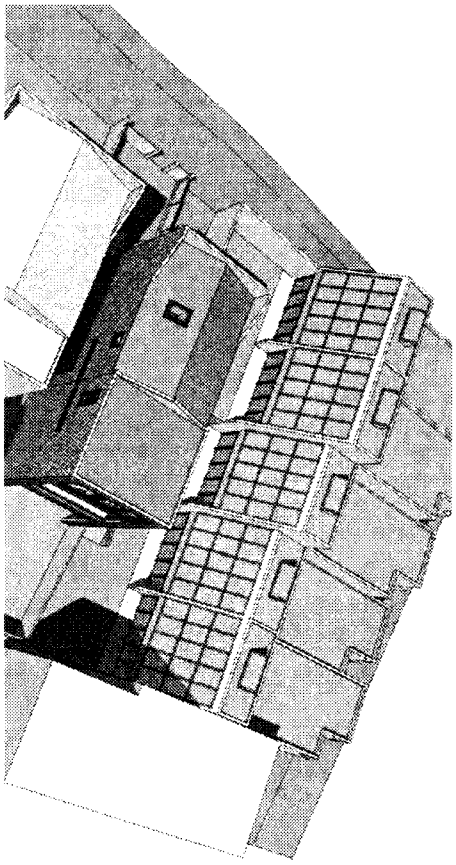


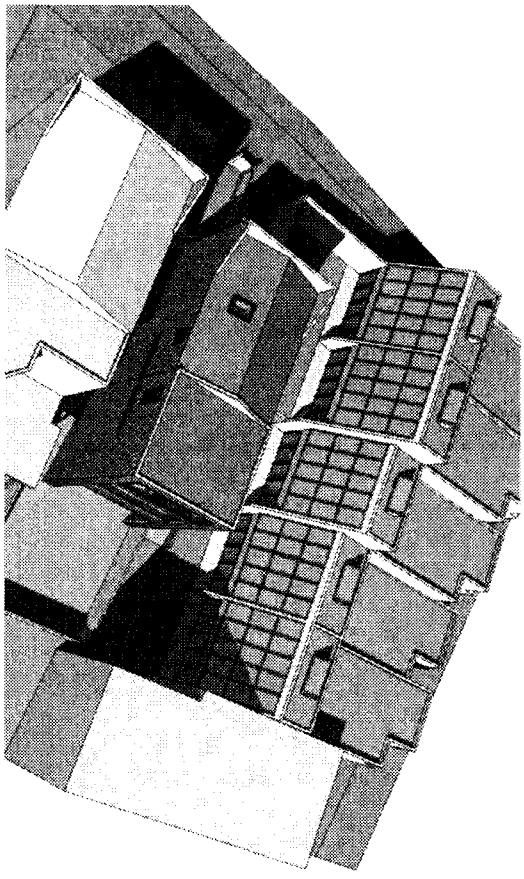










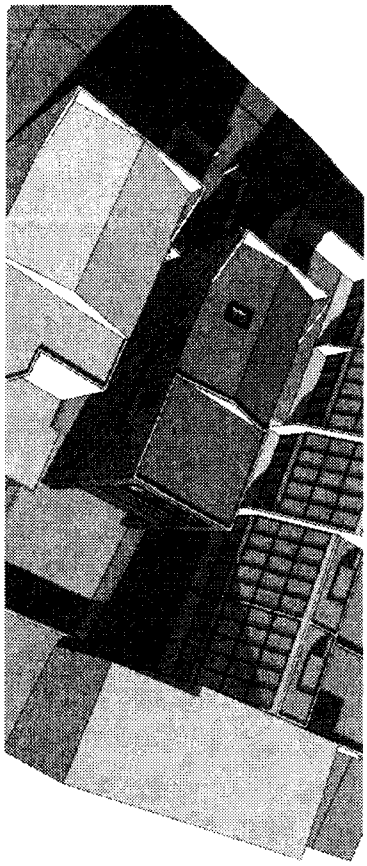


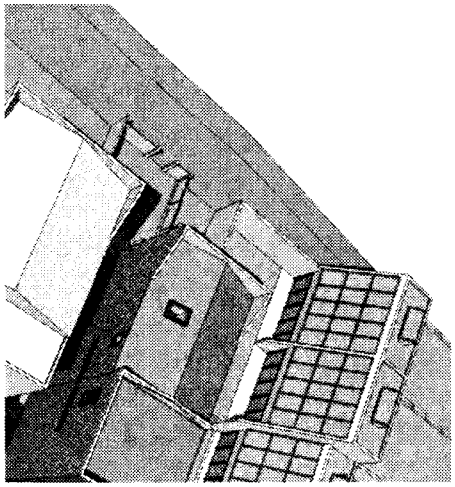


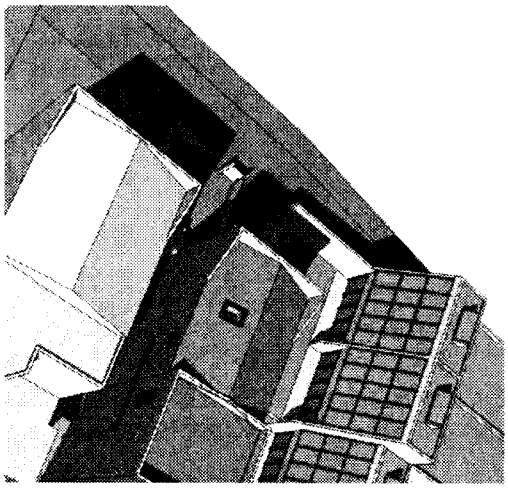


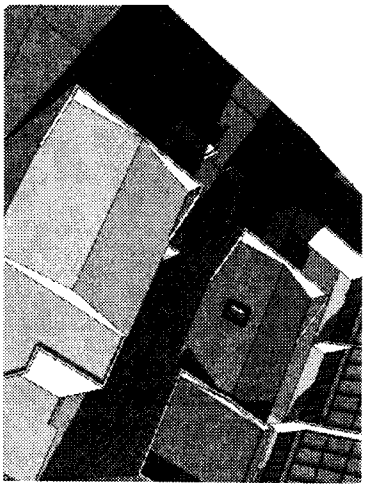


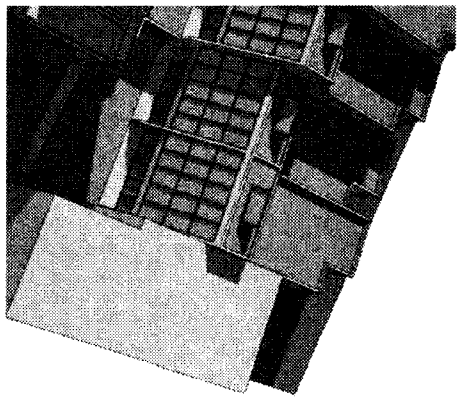


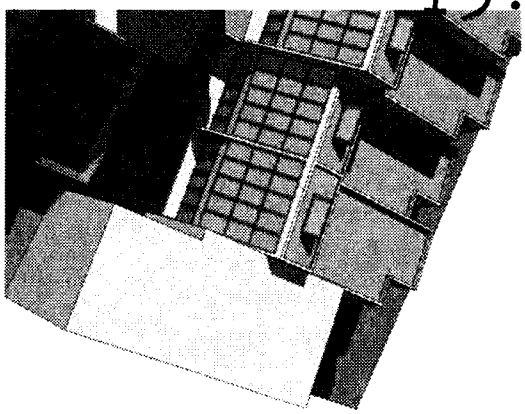


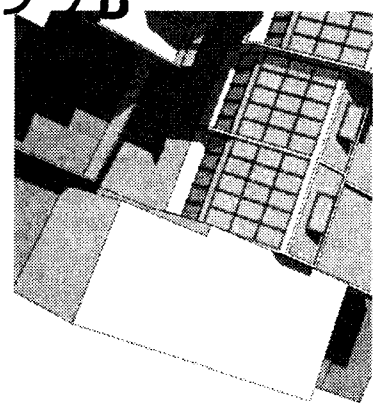


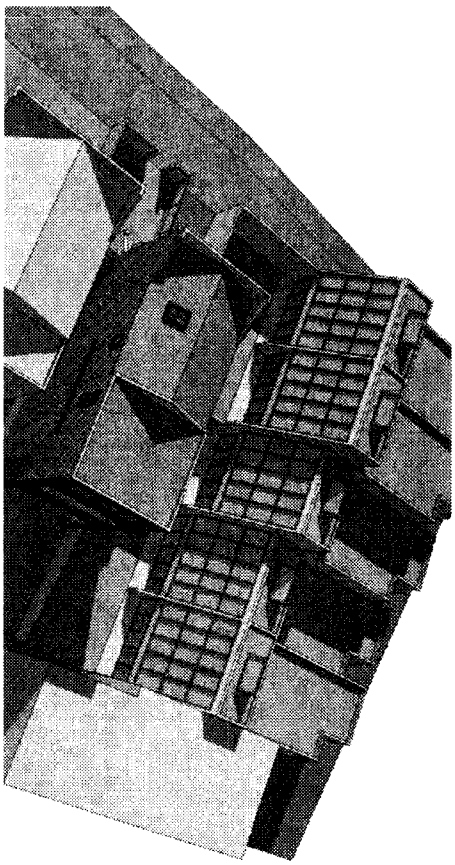


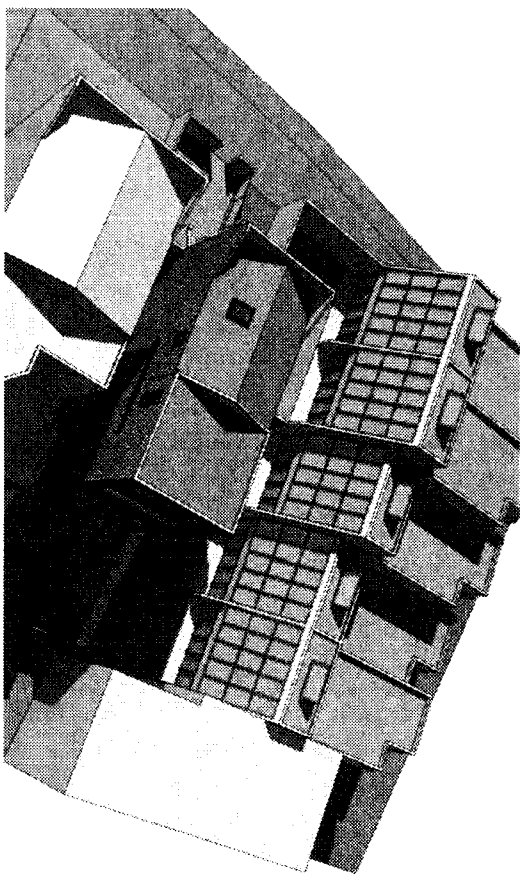


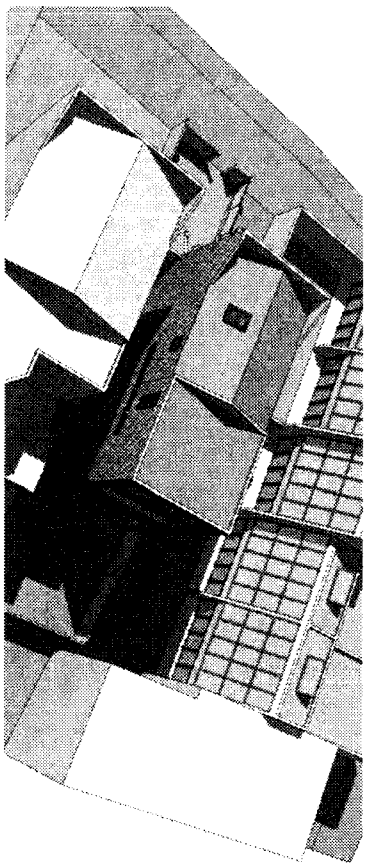


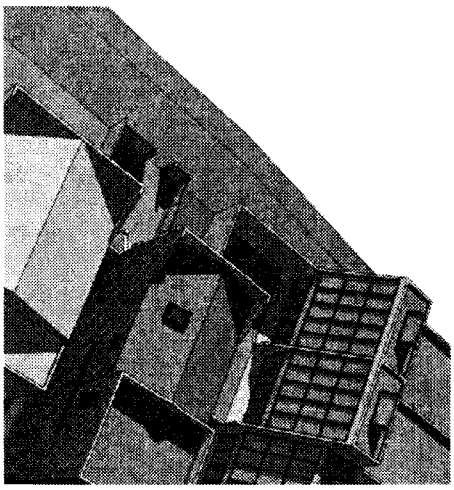


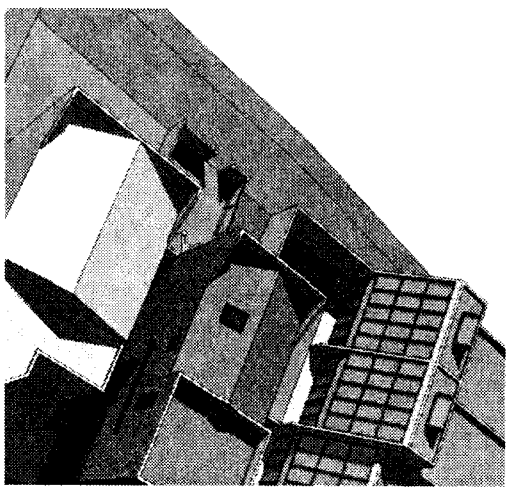


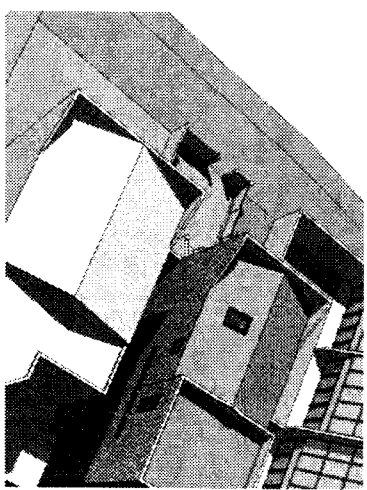


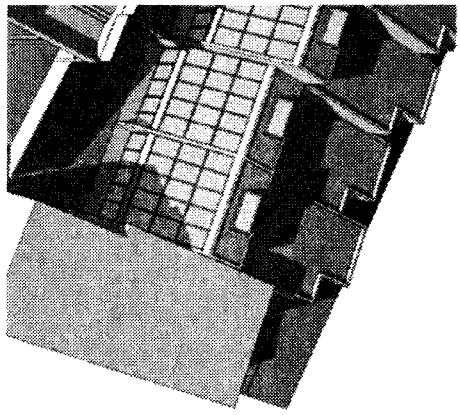


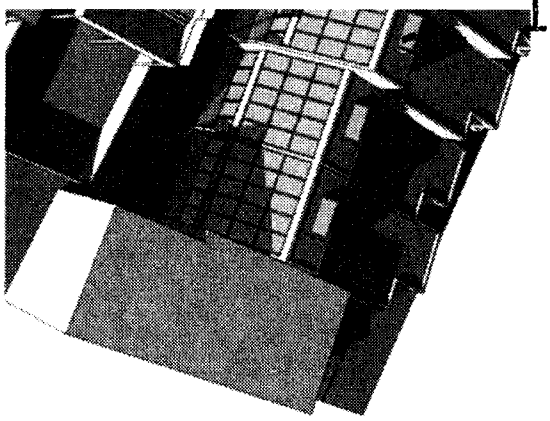


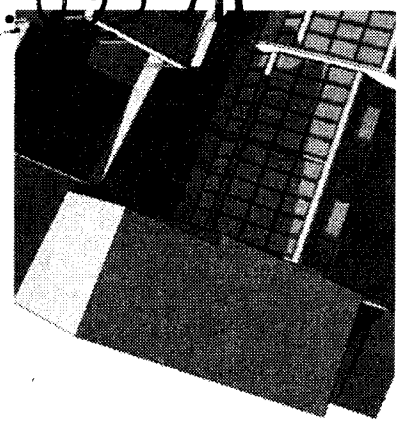


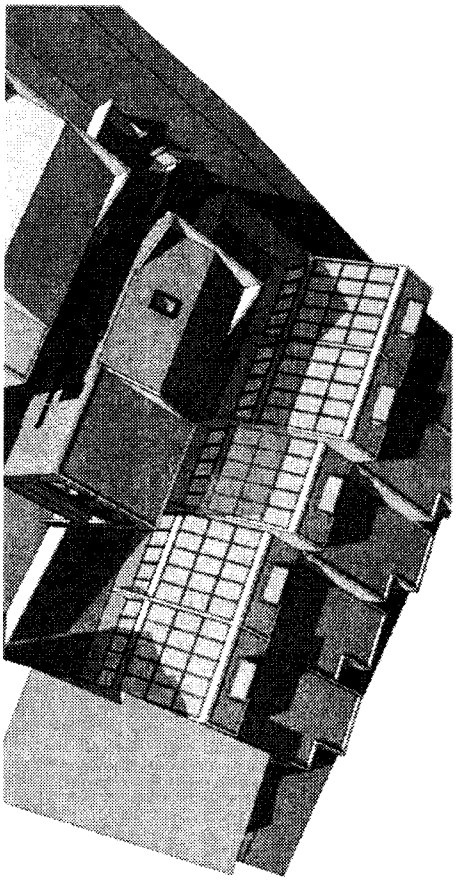


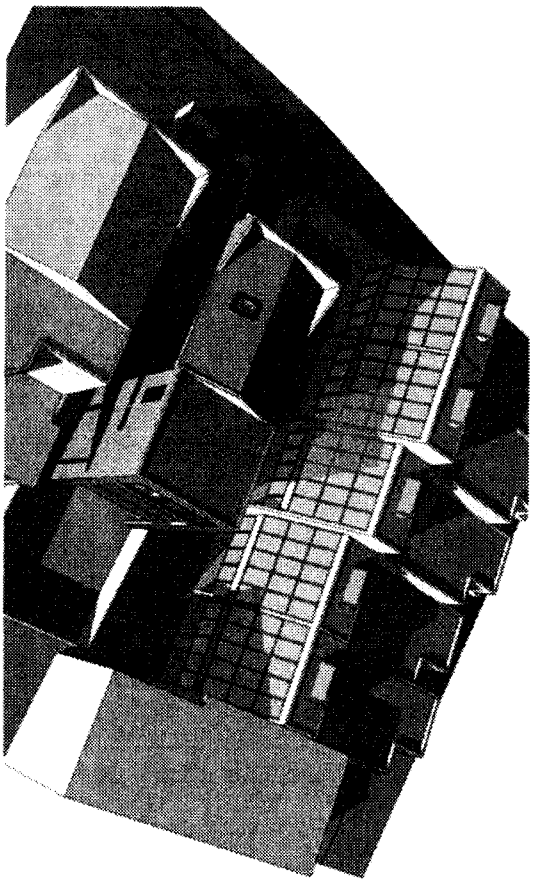


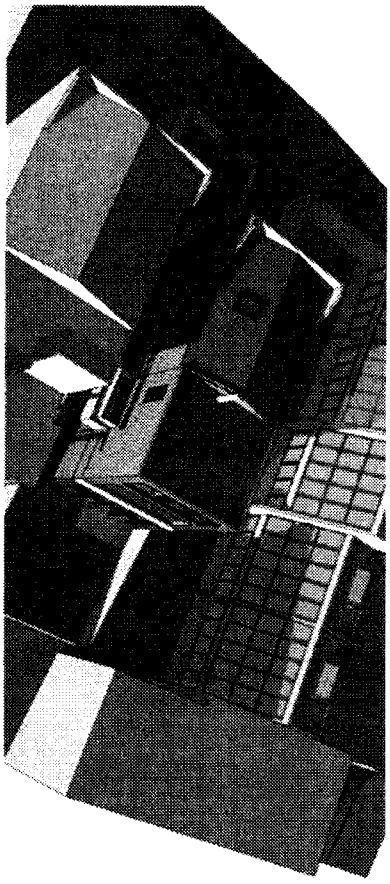


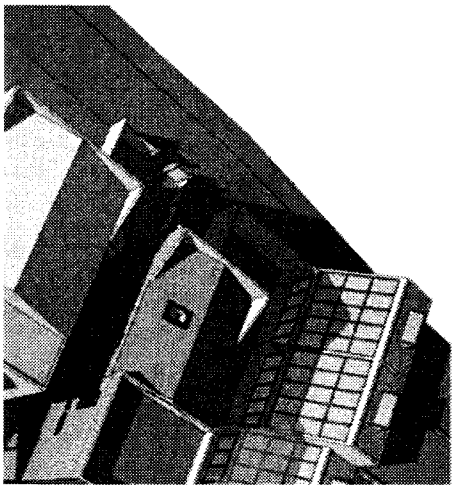


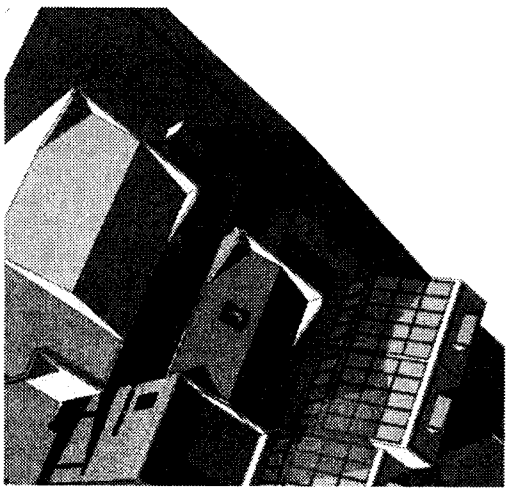


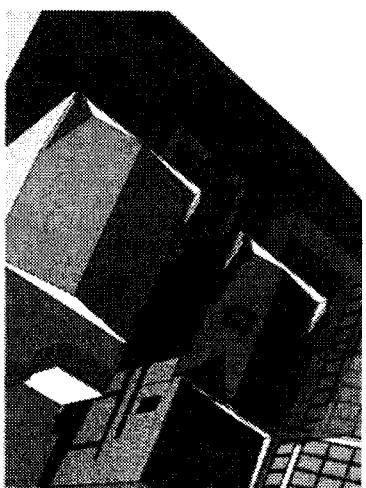


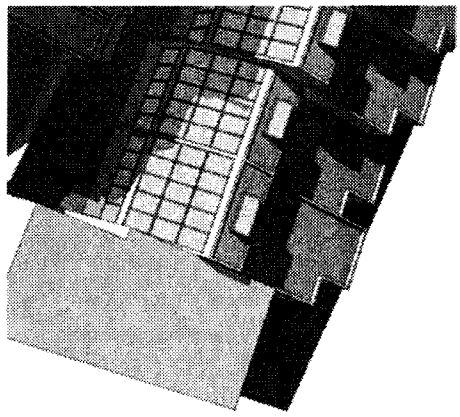


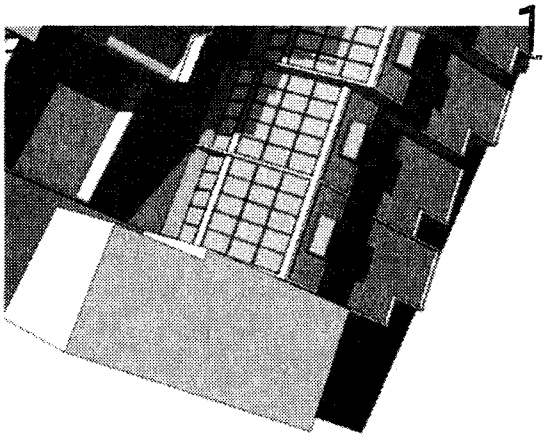


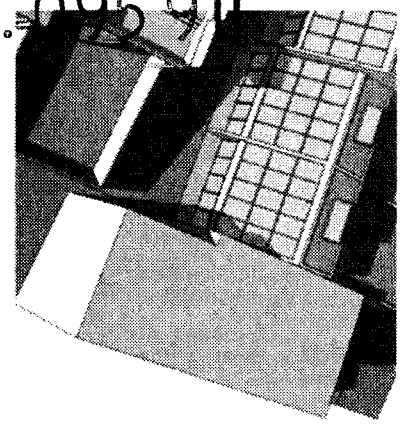


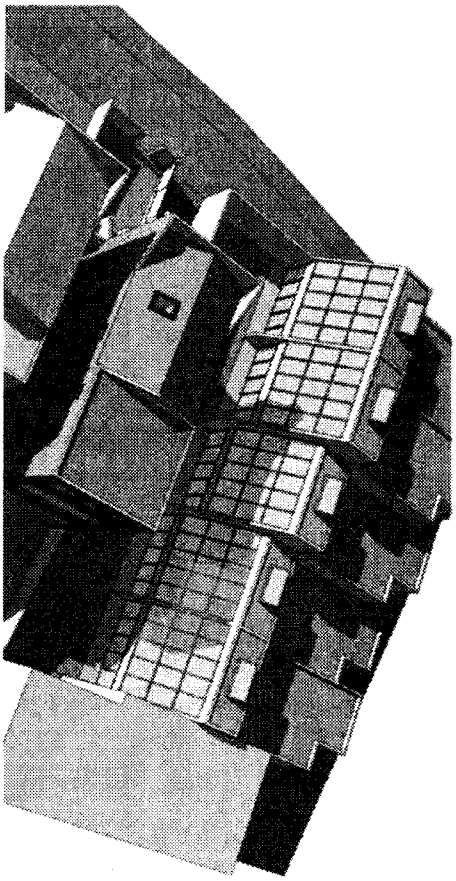


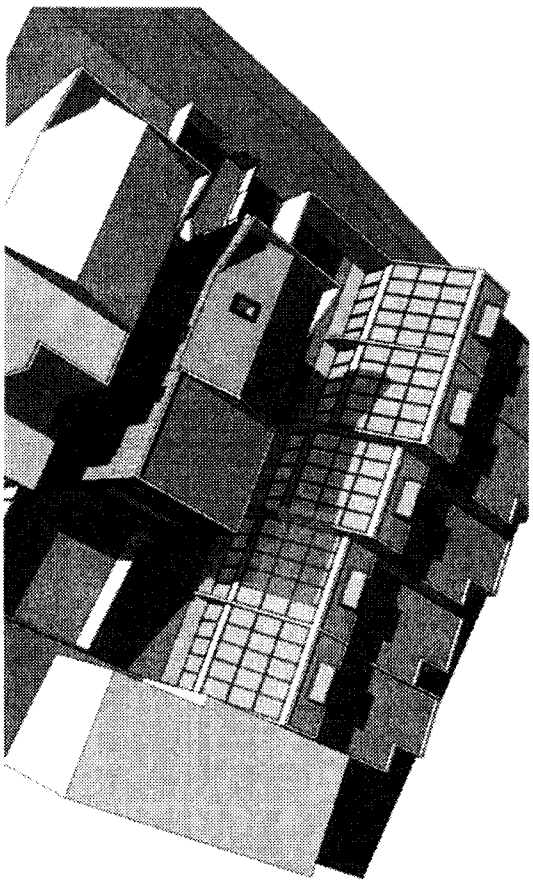


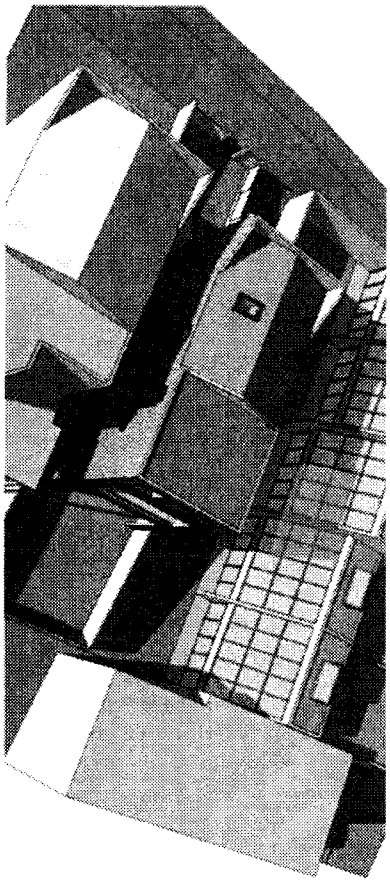


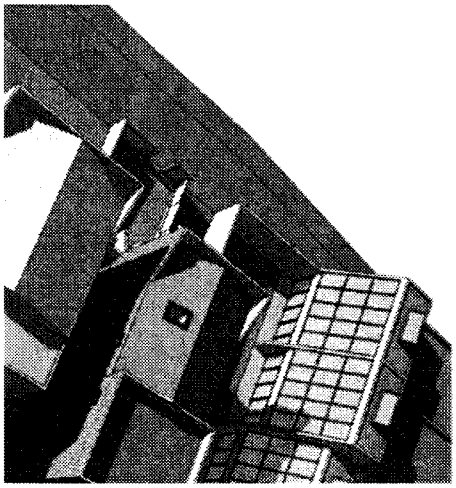


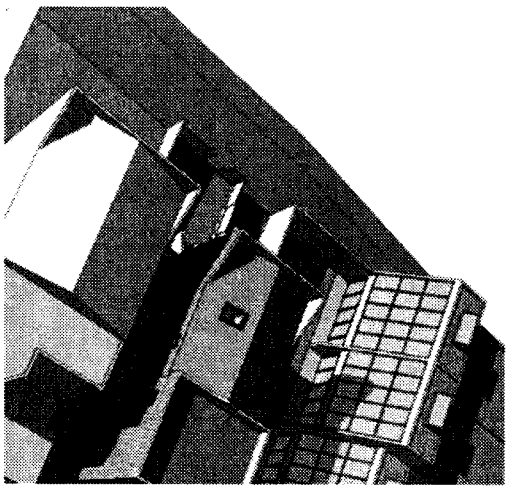


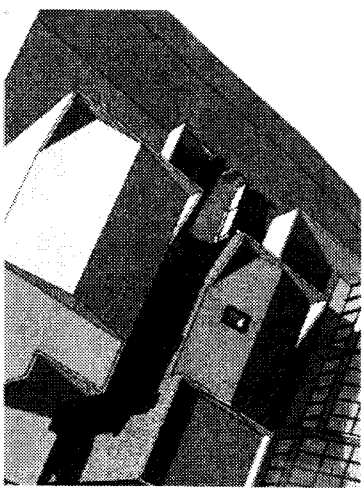


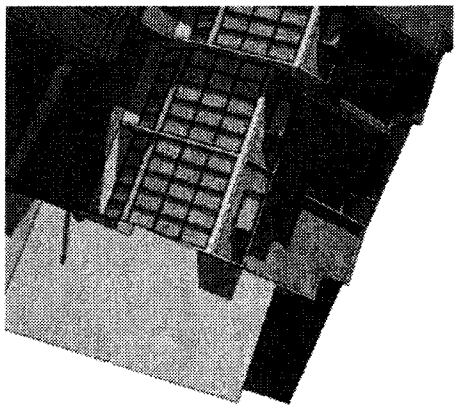


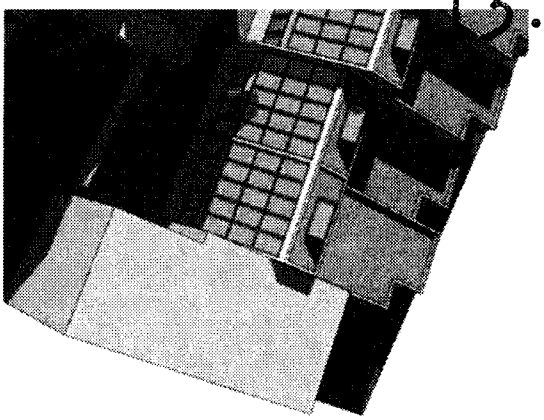


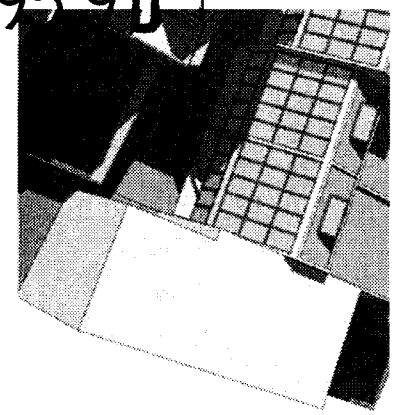


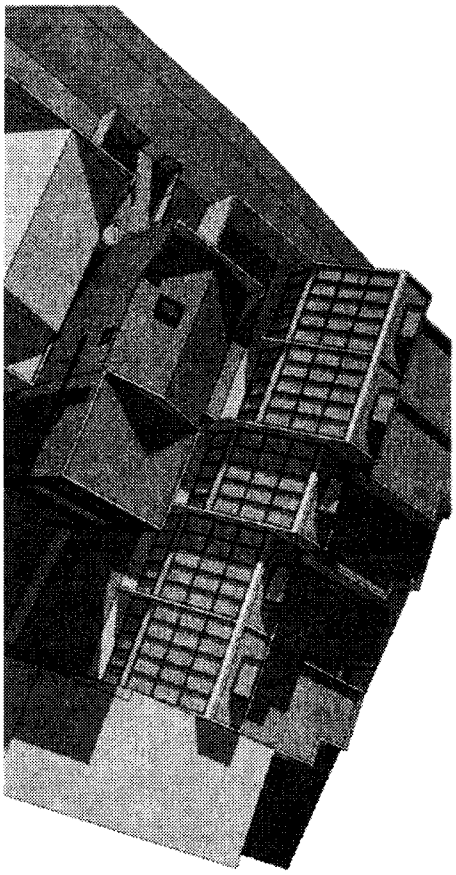


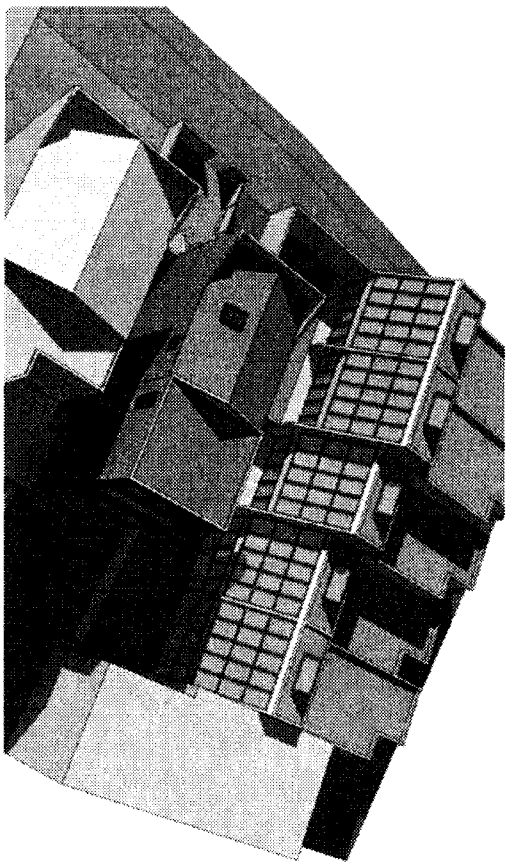


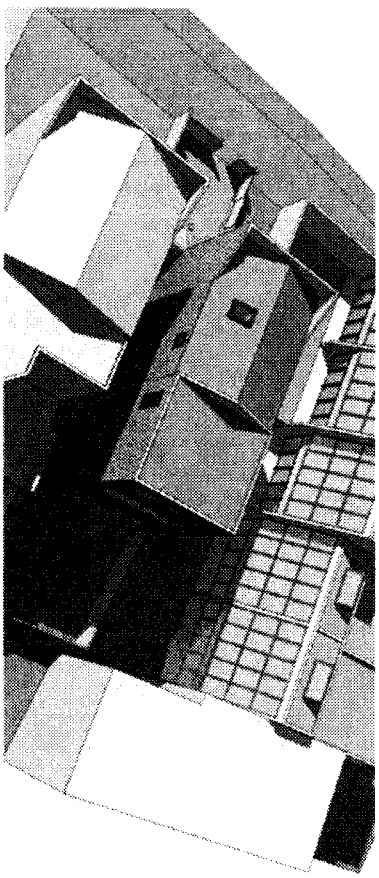


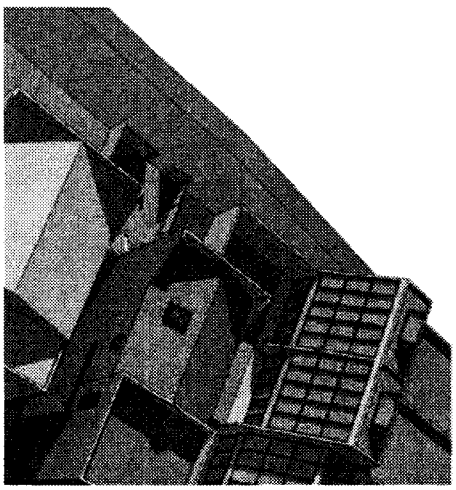


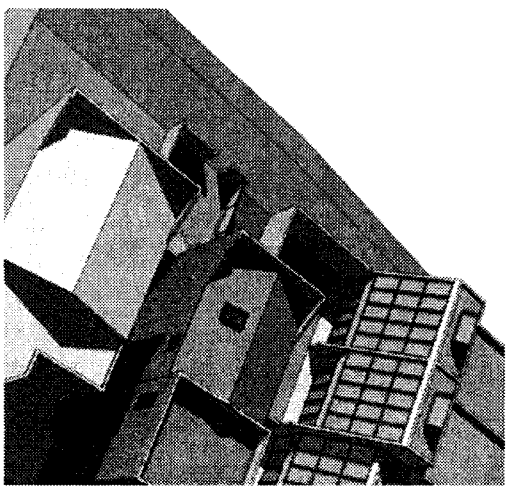


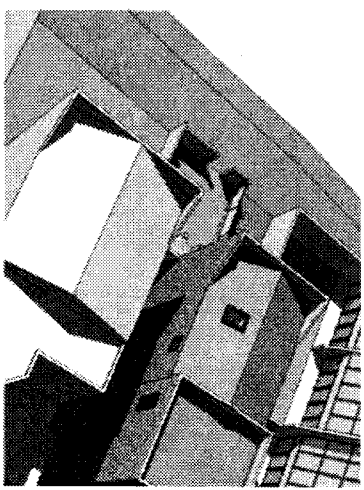


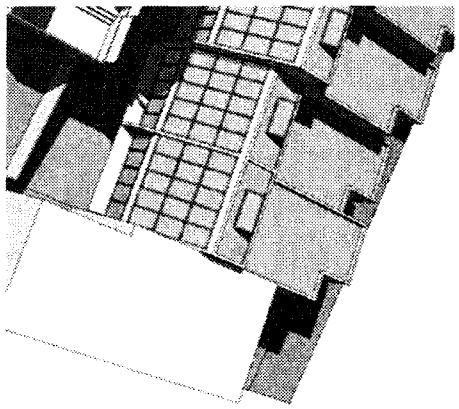


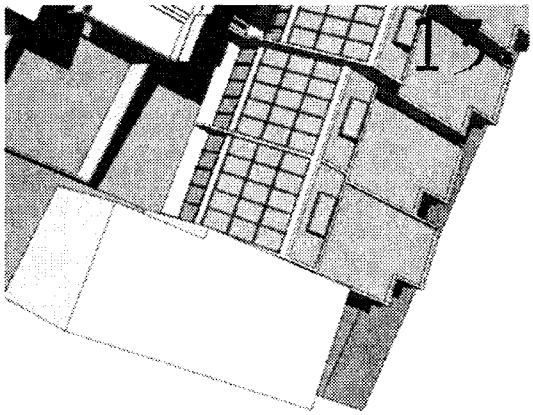


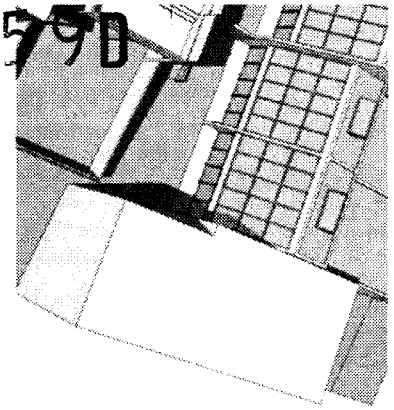


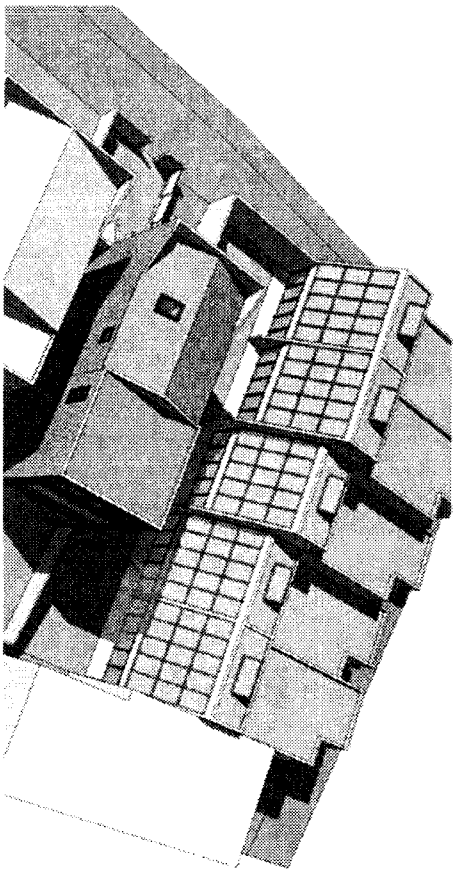


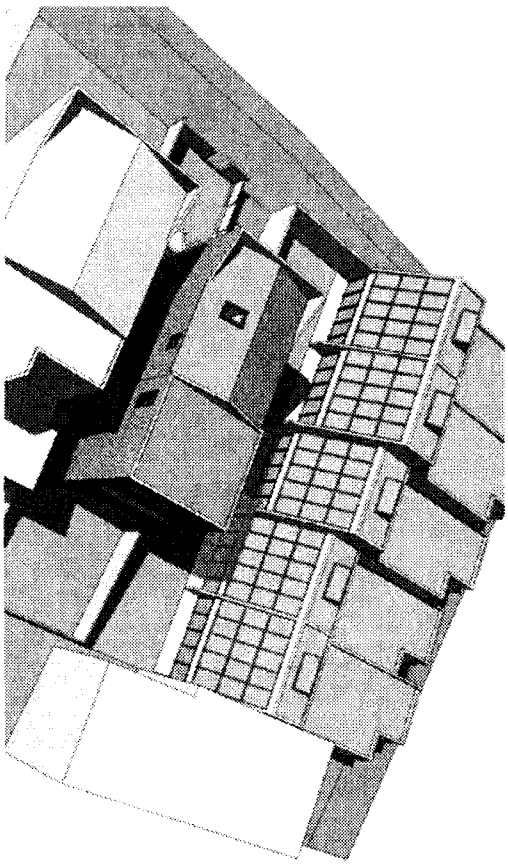


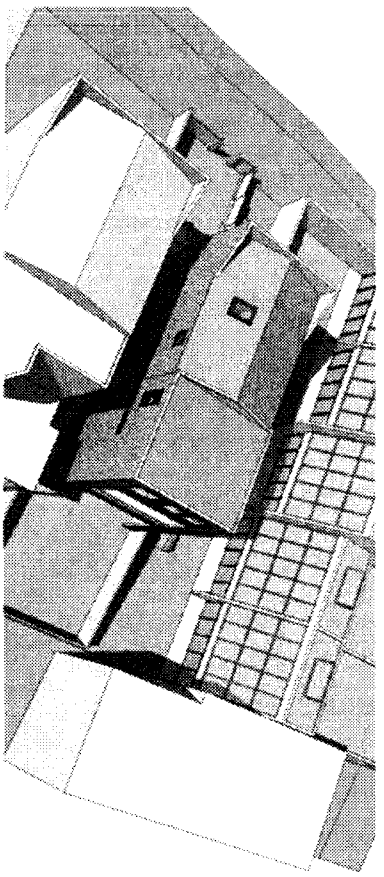


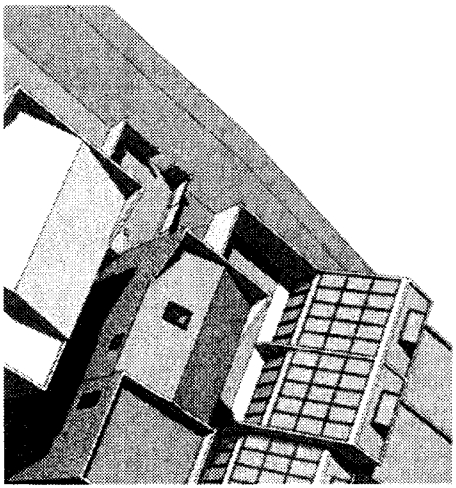


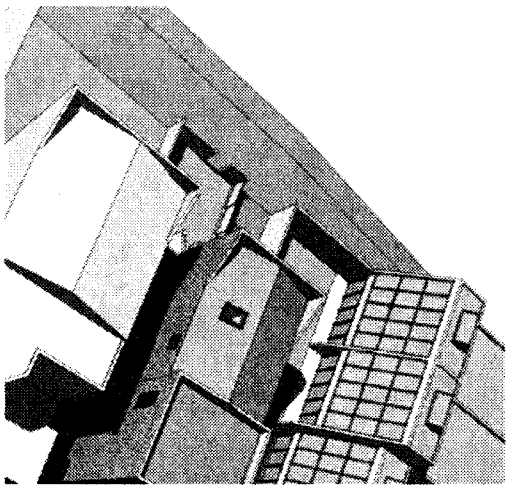


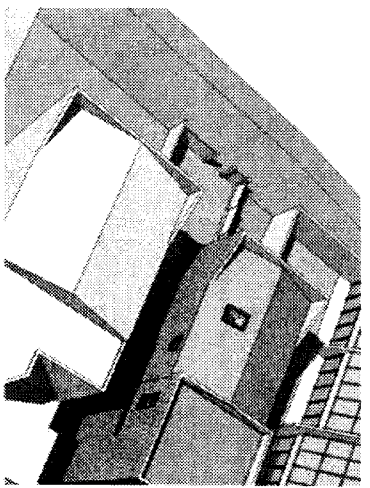


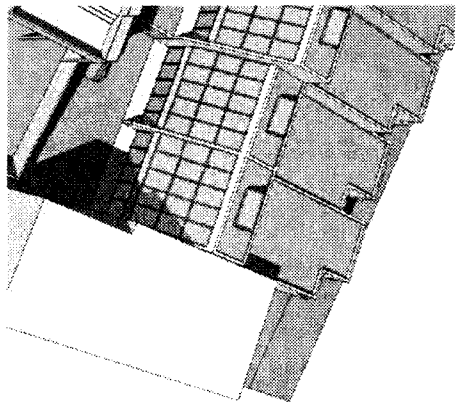
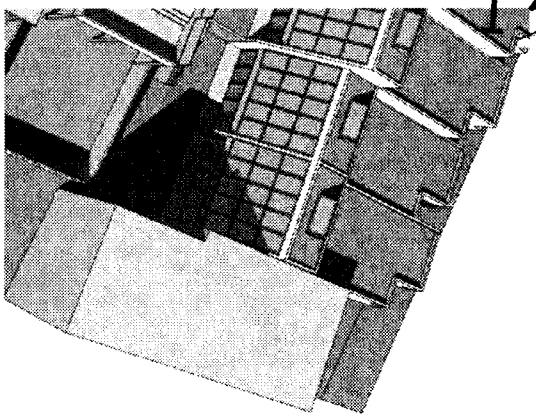
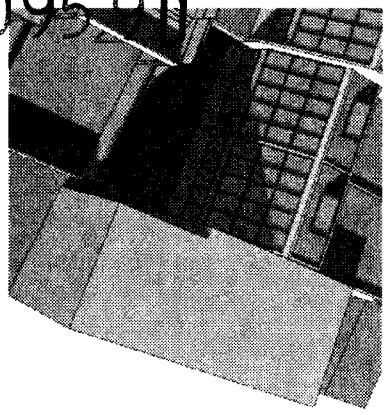
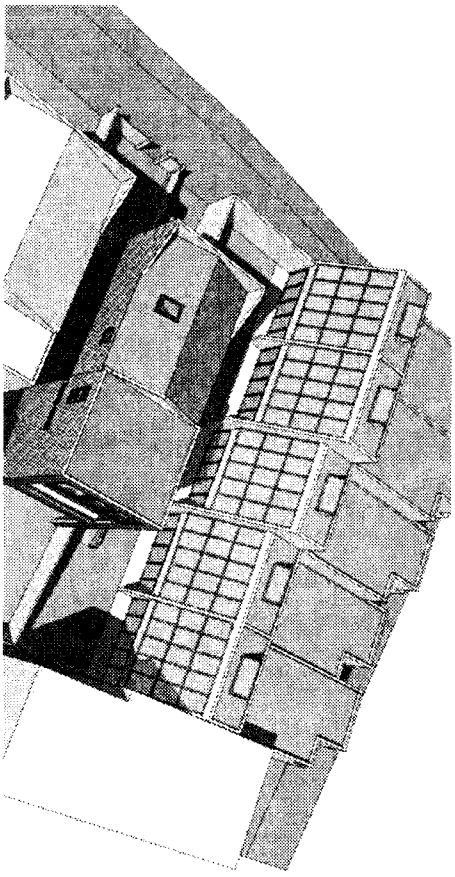
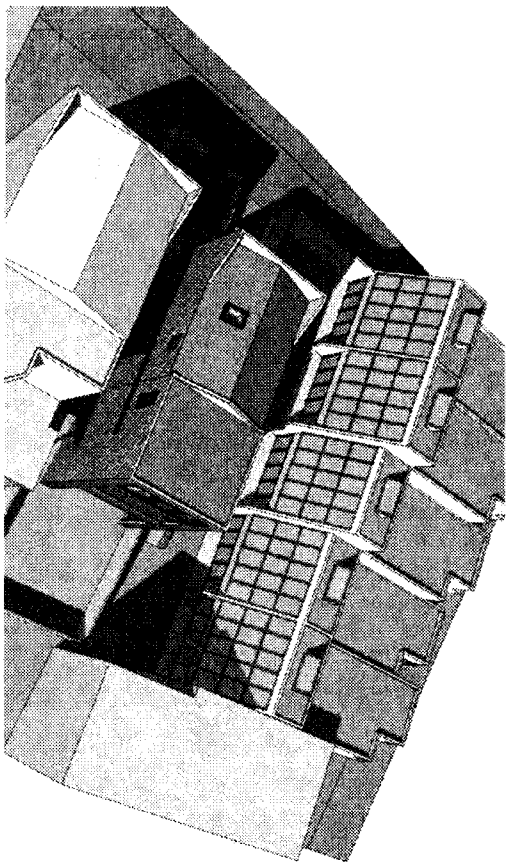
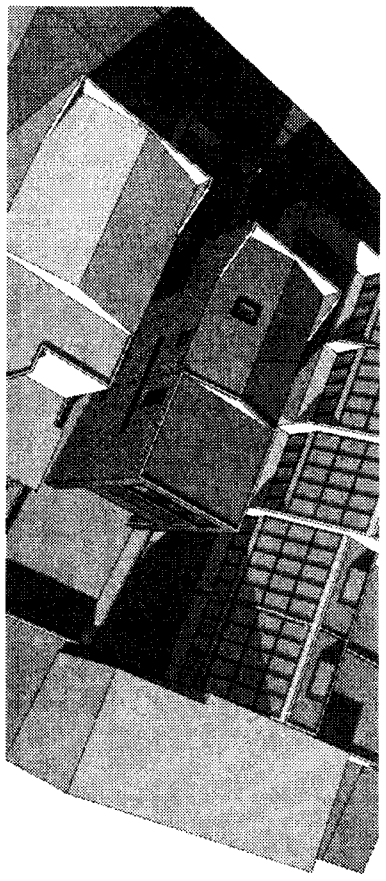
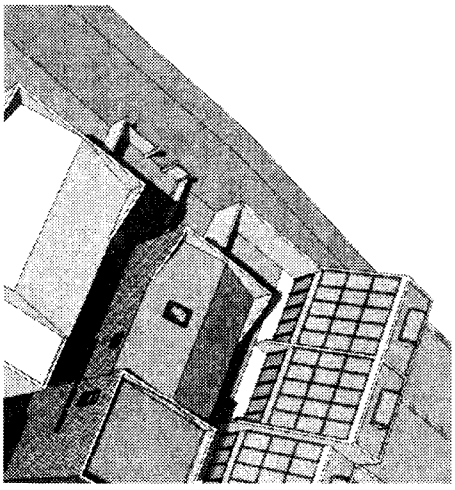
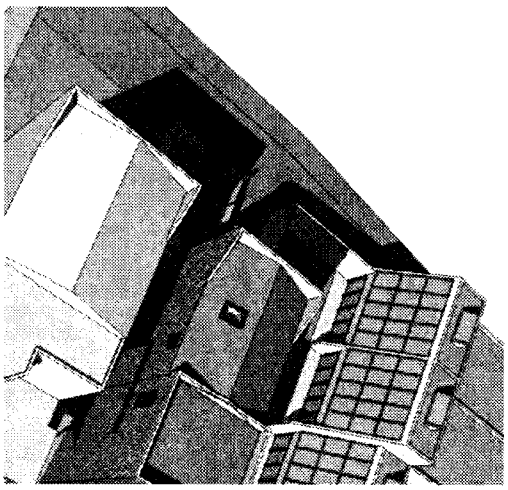
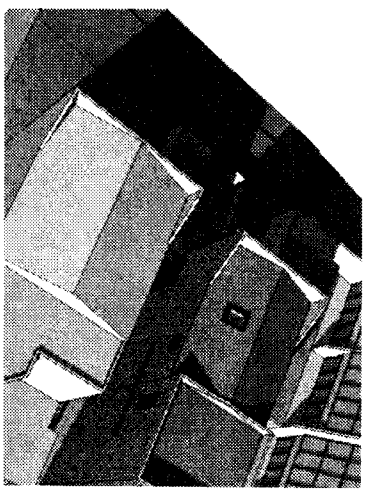


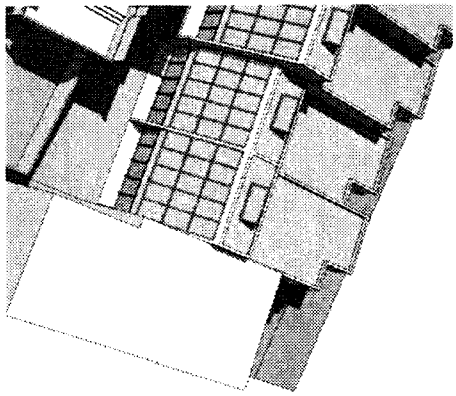
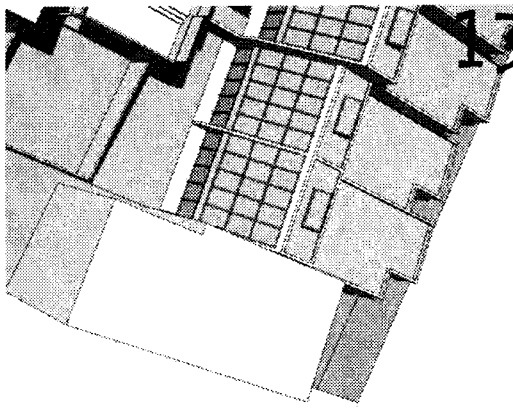
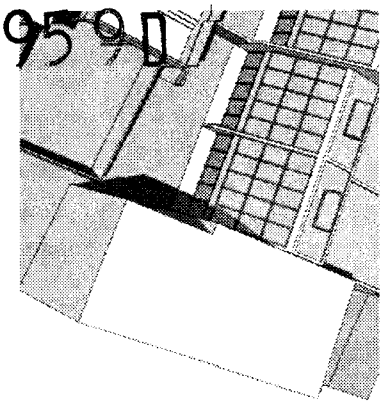
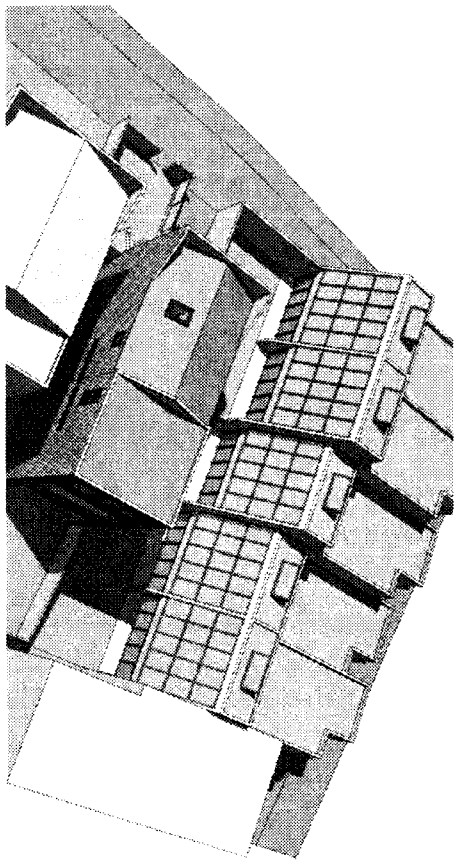
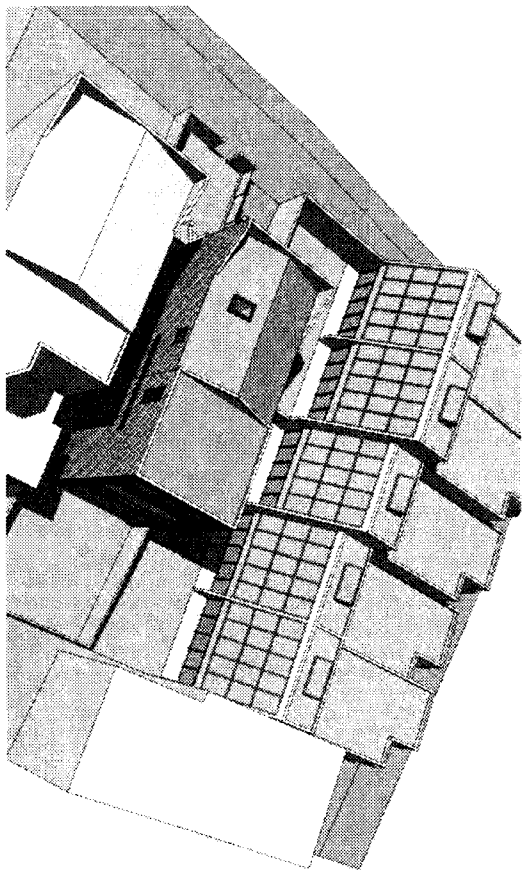
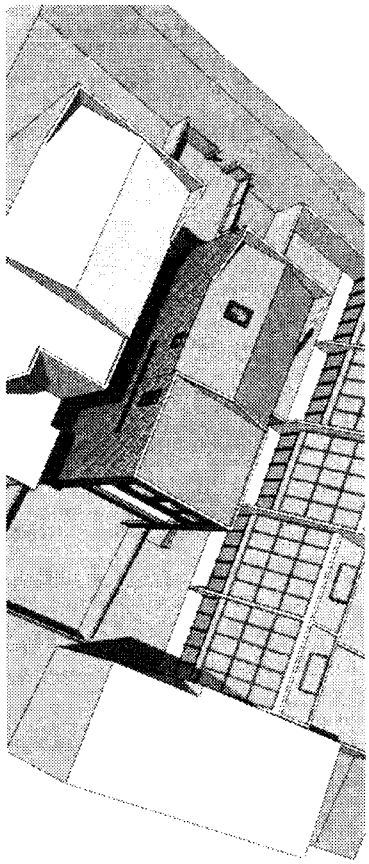
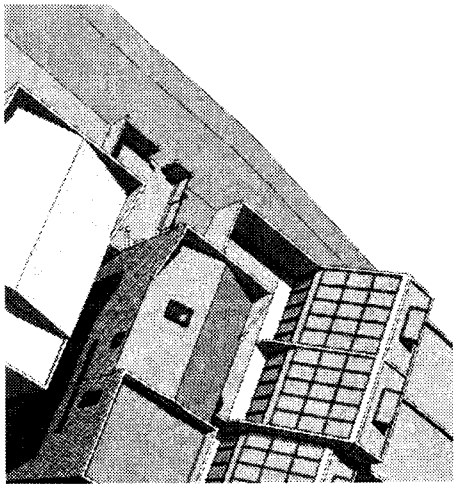
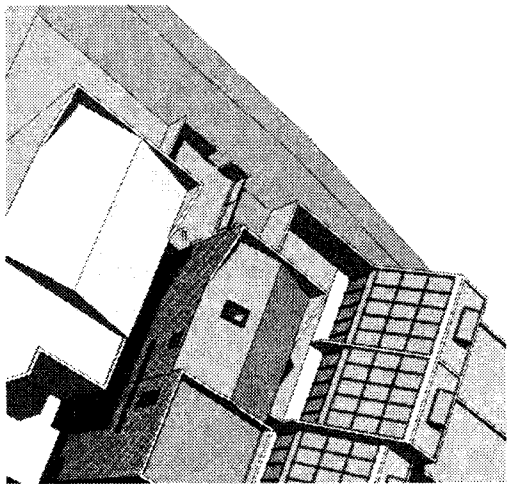
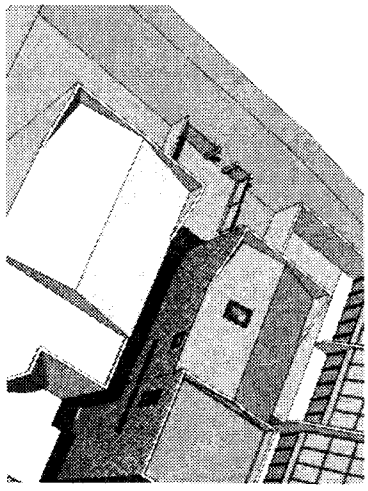


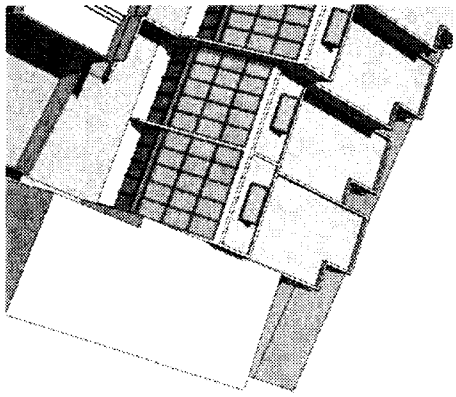
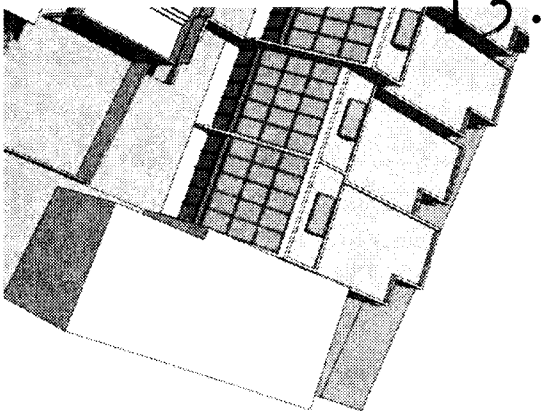
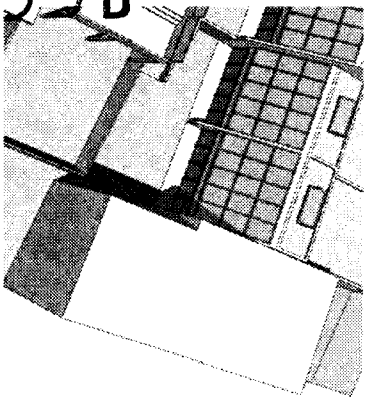
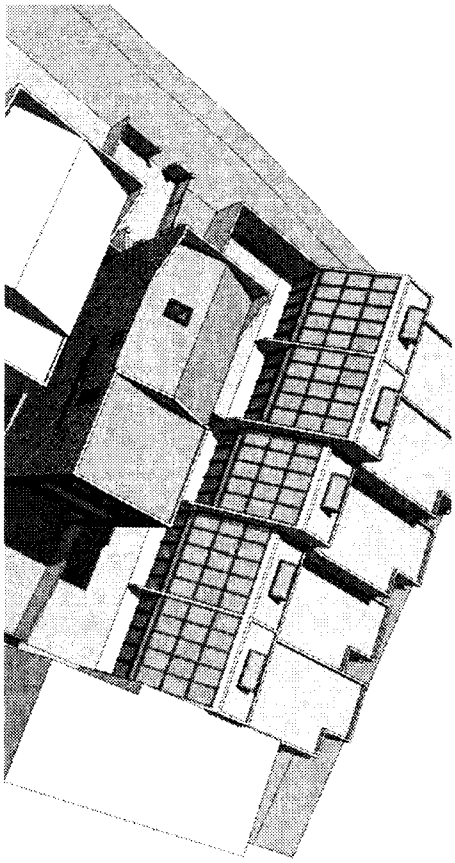
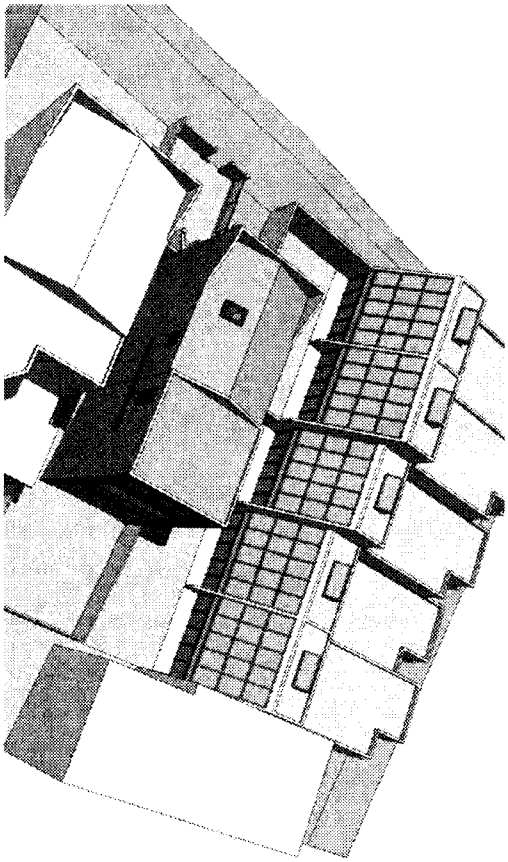
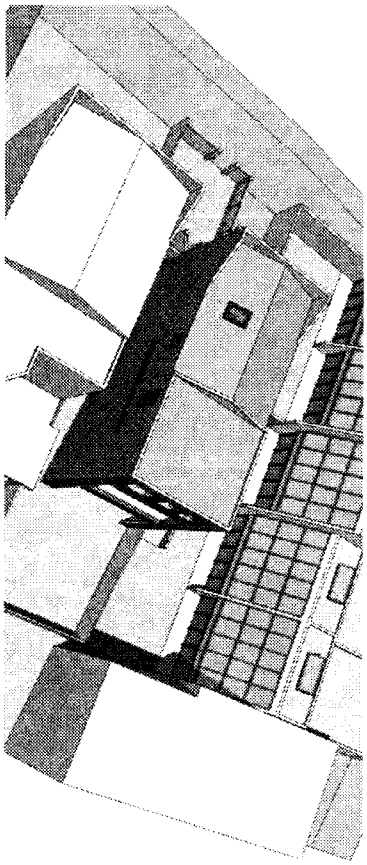
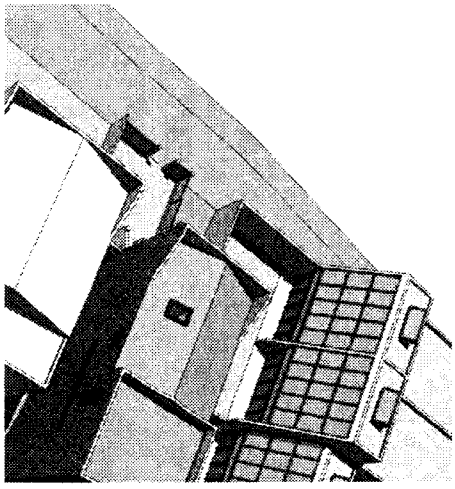
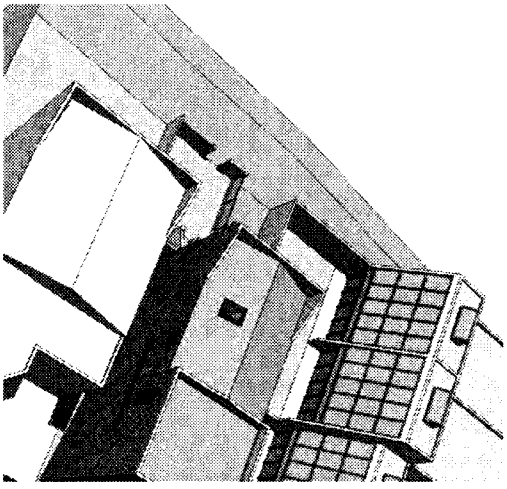
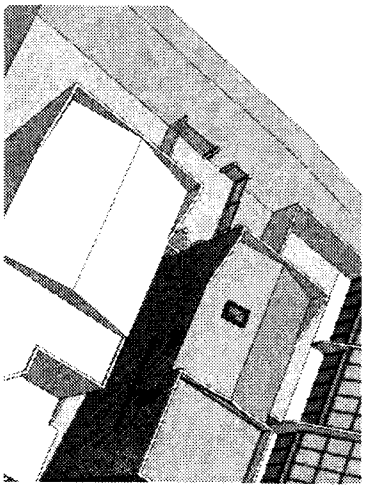


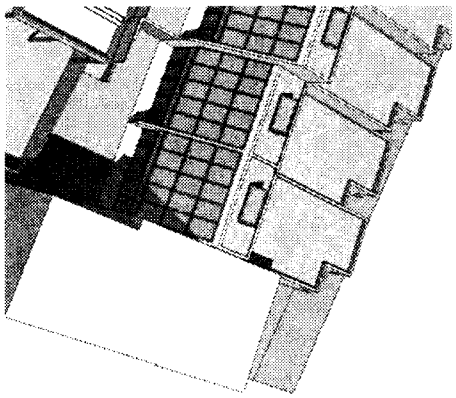
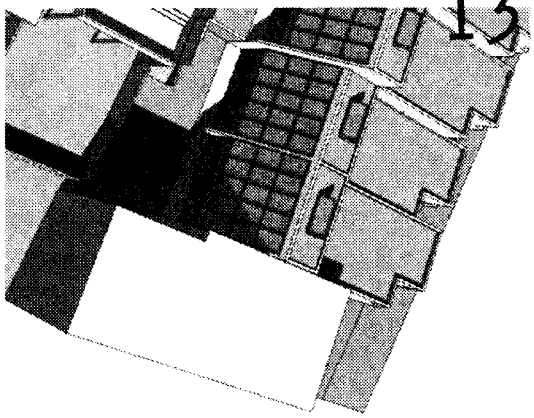
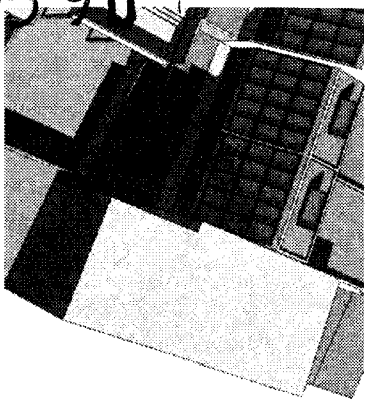
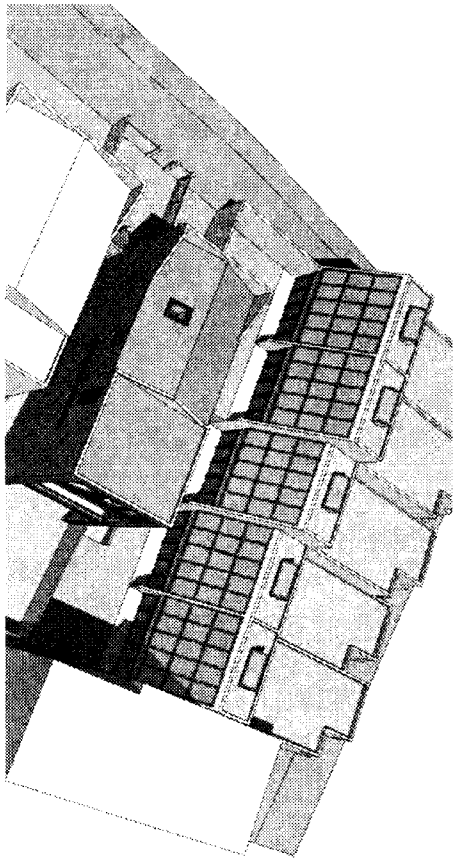
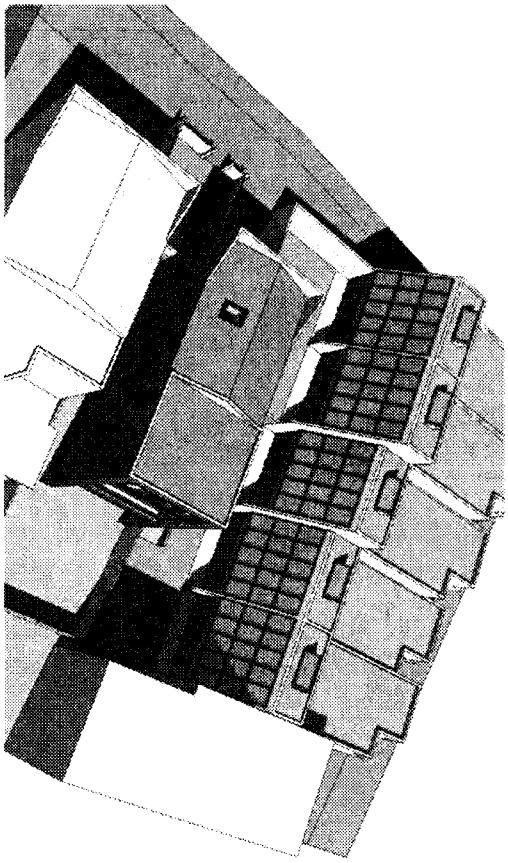
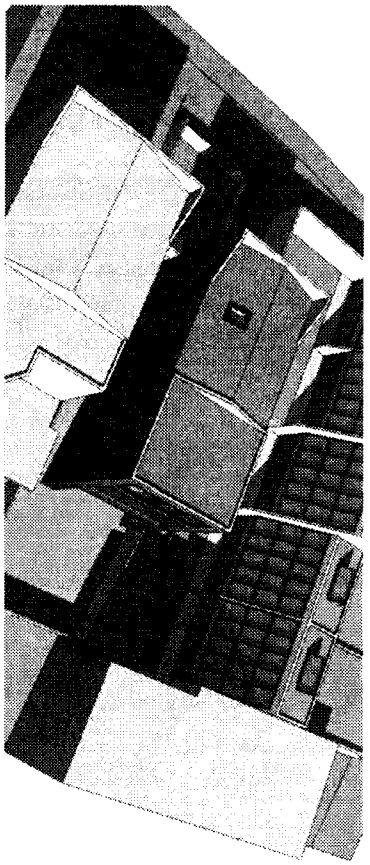
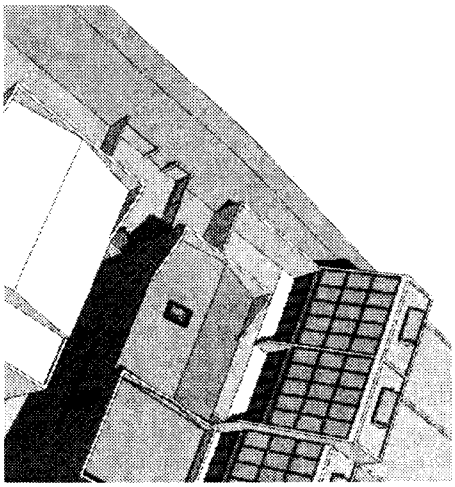
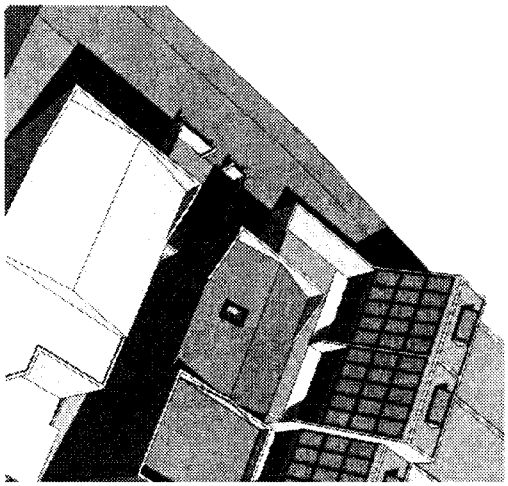
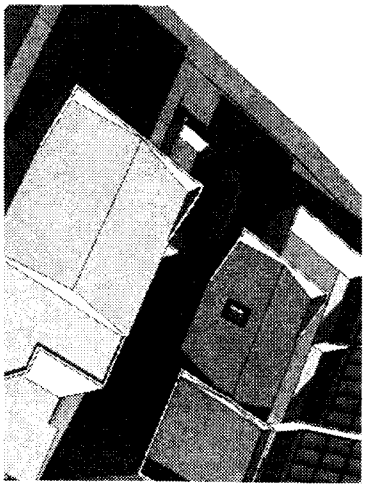


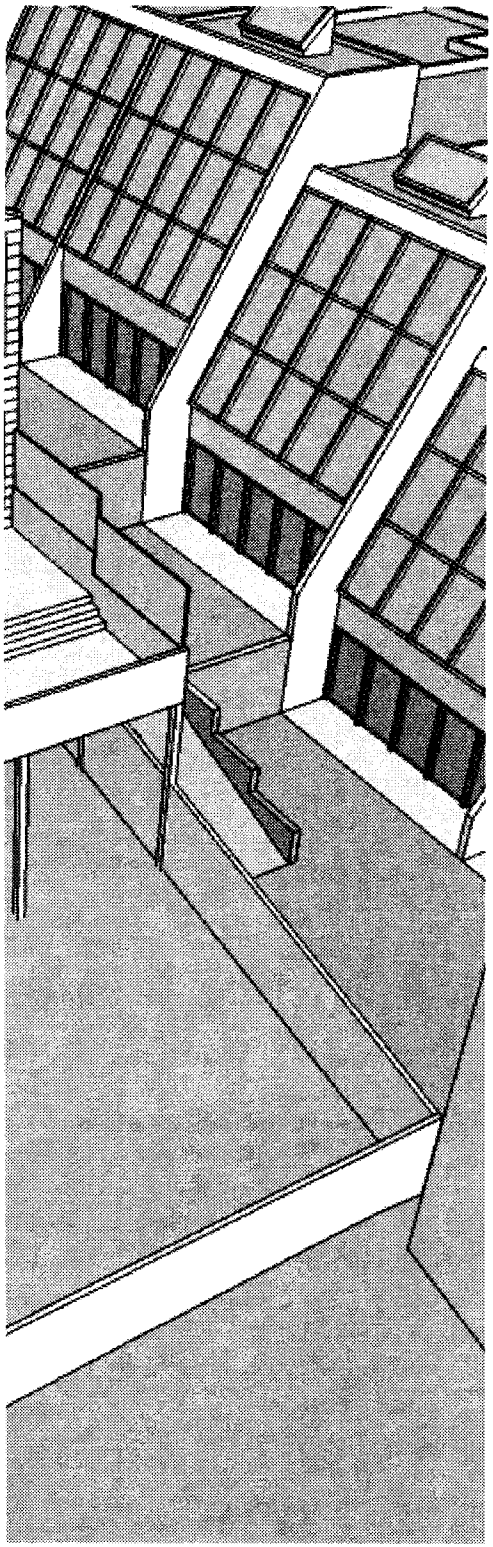


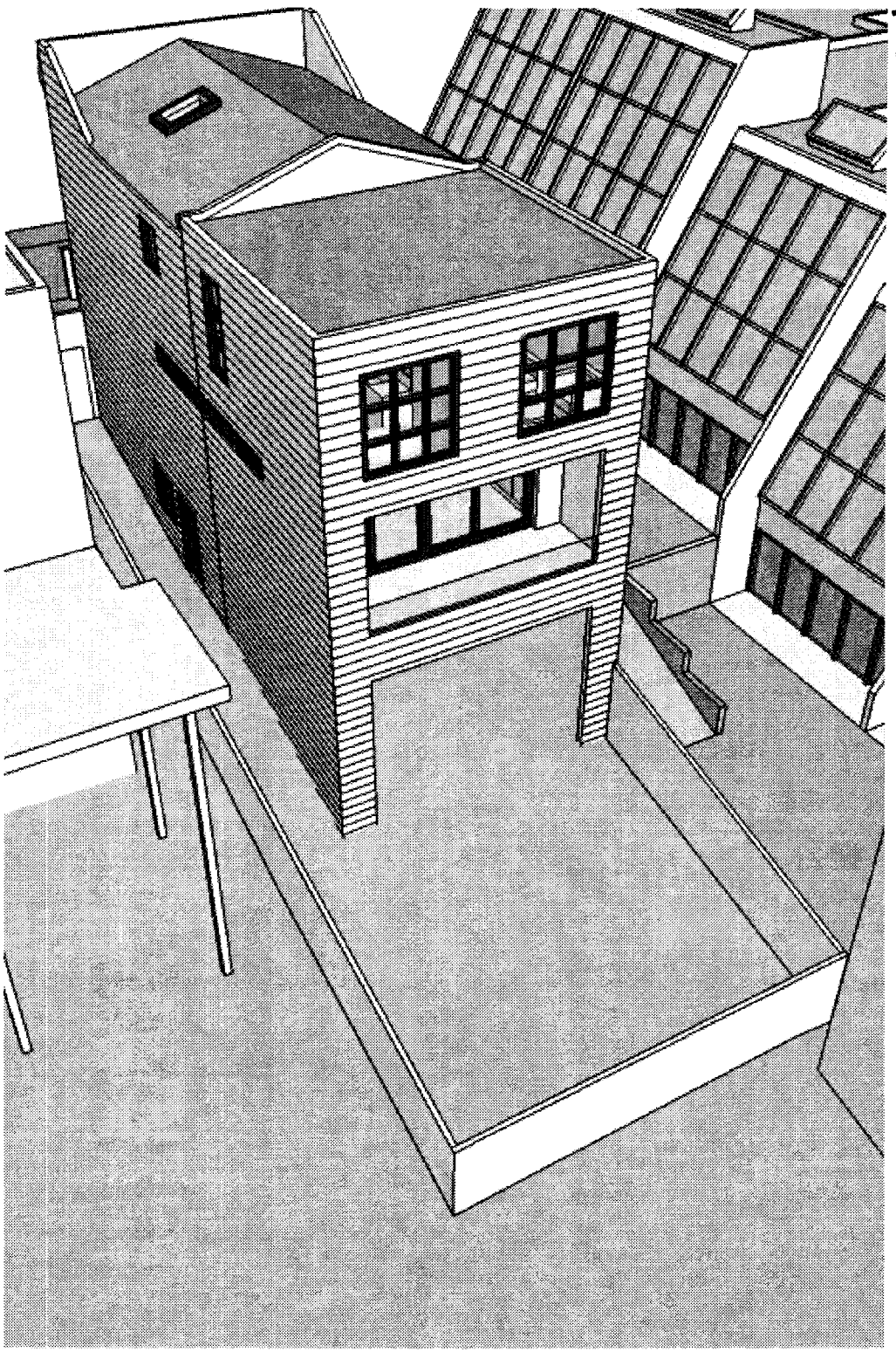










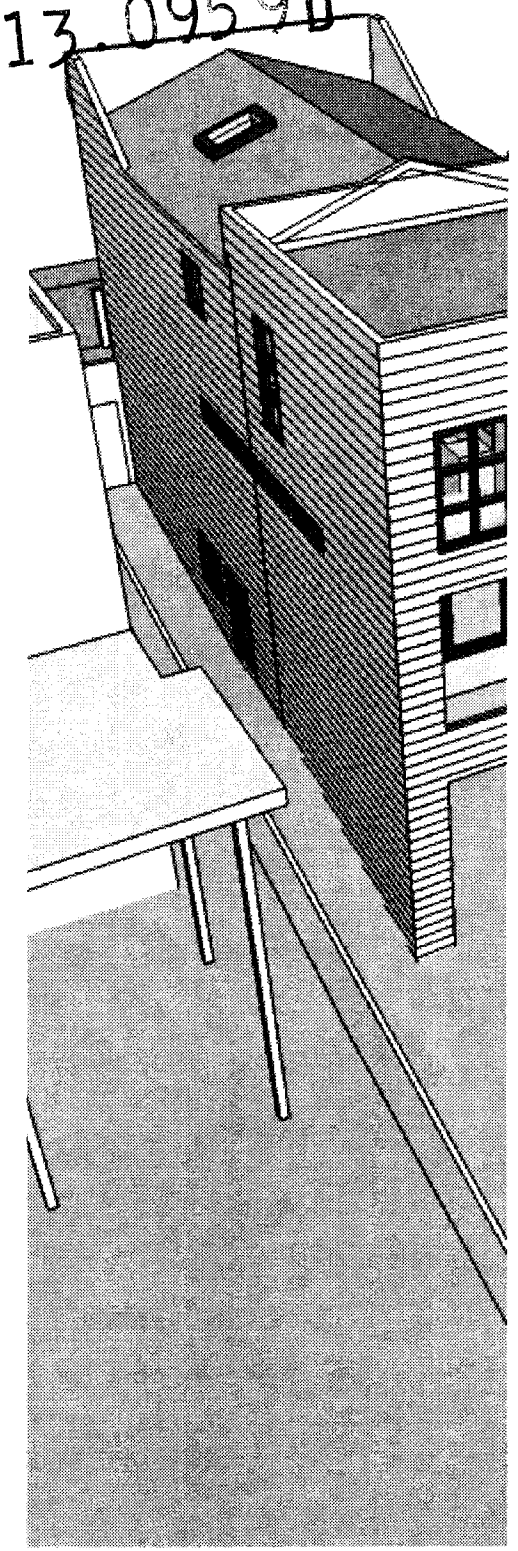
















13.0959D

(Donat Trust)
Block Lot 1129/30
1030 Broderick St.
San Francisco, CA 94115

Michael Hammett & Ron Lewis
1997 Eddy St.
San Francisco, CA. 94115

Josie Brownback
1989 Eddy St.
San Francisco, CA.
94115

Claudine Nachtrieb
1981 Eddy St.
San Francisco, CA.
94115

Greg & Lisa Ward
1973 Eddy St.
San Francisco, CA 94115

Leslie & Marjory Donaldson
1965 Eddy St.
San Francisco, CA. 94115

Steve Davis
1955 Eddy St.
San Francisco, CA.
94115

Amanda Clarke
Block/Lot 1129/31
1040 Broderick St.
San Francisco, CA 94115

(Addresses Below, on Broderick, see no change after alterations) ↓

Tibor & Janet Szikszai
1035 Broderick St.
San Francisco, CA. 94115

Dr. Richard Freeman
1049 Broderick St.
San Francisco, CA. 94115

# REUBEN, JUNIUS & ROSE, LLP

November 4, 2013

**Via Messenger**

Mr. Rodney Fong, President
San Francisco Planning Commission
1650 Mission Street, 4th Floor
San Francisco, CA 94103

**Re: Response to Discretionary Review: 1040 Broderick Street**
**Building Permit Application No. 2013.03.05.1549**
**Our File No.: 7780.01**

Dear President Fong and Commissioners,

We represent Amanda Clarke ("Ms. Clarke") in her efforts to construct a modest rear addition ("Project") to her 1,218-square-foot single-family home at 1040 Broderick Street ("Property"). Ms. Clarke has lived at 1040 Broderick as a single person since 1997 and the house previously met her needs. However for the past three years she has served as a court appointed special advocate ("CASA"). CASA volunteers are appointed by the court to serve as advocates and mentors to abused and neglected children in foster care, providing them with educational and healthcare support, mentorship, and ensuring they are in safe placement, with the goal of securing permanent, and nurturing homes. As a result of her personal experience with CASA, Ms. Clarke wishes to increase the size of her home to accommodate foster children and children transitioning out of foster care. The 1,213-square-foot addition ("Project") will make this possible The request for discretionary review ("DR Request") filed by Ms. Leslie Donaldson on behalf of the the homeowners association ("Appellant") for an adjacent five-unit building (the "Eddy Street Condos" or "Condos"), does not establish exceptional or extraordinary circumstances justifying modification of the Project. We respectfully request that the Commission not take DR and approve the Project as proposed.

## I. Executive Summary

- **The rear addition will allow Ms. Clarke to house transitional age foster youth.** San Francisco has a chronic shortage of housing for at-risk youth aging out of foster care. The purpose of Ms. Clarke's rear addition is to create living space—including a sleeping area, bathroom, study room, and living area—which will accommodate foster youth and transitional foster youth in need of housing. **(See pp. 2-3.)**

James A. Reuben | Andrew J. Junius | Kevin H. Rose | Daniel A. Frattin
Sheryl Reuben[1] | David Silverman | Thomas Tunny | Jay F. Drake | John Kevlin
Lindsay M. Petrone | Melinda A. Sarjapur | Kenda H. McIntosh | Jared Eigerman[2,3] | John McInerney III[2]
1. Also admitted in New York 2. Of Counsel 3. Also admitted in Massachusetts

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- **San Francisco Architectural Heritage approved the rear addition**. Ms. Clarke sought and received approval for the Project from San Francisco Architectural Heritage, incorporating Heritage's proposed changes to ensure the Project conforms to the Secretary of the Interior's standards for the treatment of historic properties (see **pp. 3.)**

- **The rear addition is modest and wholly code-compliant**. Due to the building's historical status, the Property can only be developed to the rear. Despite this limitation, The Project is eight feet under the height limit, provides 13.5 more feet of front setback than is permitted, maintains a 6-foot side yard setback where none is required, would have 5 fewer dwelling units than permitted, and provides a 25-foot rear yard. The addition would make the building consistent in size with adjacent single-family homes—which average 2,811 sq. ft. in size—and have a 0.87:1 floor-area, less than the 1.19:1 average for adjacent properties along Broderick. Ms. Clarke's home is currently the smallest on the block at 1,218 square feet, and below the average size of other properties by 1,593 square feet. As proposed, the project will still be below the average size of adjacent single family homes. **(See pp. 3-4)**.

- **Sunlight and energy efficiency studies demonstrate the Project's minimal impact**. The Project will only increase shadowing during the fall and winter, and at most will cause shadows over each of Appellant's condos for approximately two hours a day. The Appellant rejected Ms. Clarke's offer of $1,885, the estimated maximum increase in energy cost over a ten year period to the entire five-unit Eddy Street Condo building. A second offer of $3,770, the estimated maximum increase in energy cost over a 20 year period, was offered by Ms. Clarke and this was also rejected.**(See pp. 4-6)**

- **Appellant's demand to eliminate the rear ten feet of the Project is unreasonable.** The top-floor setback proposed in the DR request would eliminate either a bedroom or study upstairs. The intended use of the second bedroom upstairs is for an underage foster child. Ms. Clarke is a small business owner and taking on parenting responsibilities will make a home office necessary. The studies further demonstrate that the setback would not provide a corresponding benefit to the neighbors. **(See pp. 6-7)**

- **Good faith effort at compromise.** Ms. Clarke has made every good faith effort at compromise. She has only applied for the amount of living space necessary to accommodate an underage foster youth in a bedroom on the same level as the master bedroom and to provide housing for one to two transitional foster youths on the first floor. Her project as proposed is far below applicable zoning requirements. She volunteered to and is proceeding with a fire-rated roof instead of a parapet to accommodate her neighbors. She offered to pay for twenty years of the maximum increase in energy costs for Appellant's entire condominium subdivision.



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## II. Purpose of Rear Addition

The purpose of Ms. Clarke's rear addition is to create living space and housing for foster and transitioning foster youths. The existing 1,218 sq. ft. home has a kitchen and shared living/dining room on the first floor. The second floor has two bedrooms and the home's only bathroom. The 1,213 sq. ft. rear addition would add a sleeping area, bathroom, and living area to the ground floor level. It would enlarge the first floor living room, kitchen, and dining area. The two bedrooms on the top floor would be expanded, and a bathroom and study area would be added to the top floor.

As this Commission learned in its review of the Booker T. Washington Center[1] and the Community Housing Partnership[2] project at 3155 Scott Street, supportive housing for youth aging out of foster care is in short supply.[3] These young adults are at risk for homelessness, prolonged unemployment, involvement with the criminal justice system, and poverty. The Project will allow Ms. Clarke to provide a safe and supportive home to a foster child and one or two children transitioning from foster care.

## III. The Project is Modest in Scope and Consistent with the Neighborhood

Ms. Clarke has proposed a 1,213 sq. ft. addition to accommodate at least two more people living in her home. The Project accommodates the unique historical nature of the Property by preserving the possibly historic front façade. It is within use and size controls for dwelling unit count, front setback, height limit, and side and rear yard, and fits comfortably within the street block's existing rear yard open space envelope.

Ms. Clarke's home was built in 1900 and is considered a possible historic resource. Alterations to the portions of Ms. Clarke's home visible from Broderick Street could jeopardize the Project's CEQA exemption determination, and lead to unnecessary delays and expenses. The Project as designed was approved by the San Francisco Architectural Heritage organization, and determined to be consistent with the Secretary of the Interior's standards for the treatment of historic properties. (See **Exhibit A.**) As a result of its historic characteristics, the only location on the Property for Ms. Clarke to reasonably accommodate the modest addition is in the rear of the parcel. Between the 25-foot rear-yard Ms. Clarke will provide and the 27-foot front setback, only 52% of Ms. Clarke's property is buildable, and the Project would reflect roughly 19% of that buildable area, without seeking relief from the rear yard requirement.

The Project is modest in comparison to the scope of development permitted on the Property under the applicable Planning Code controls, as demonstrated by this chart:

---

[1] See Planning Commission Motion No. 18342, Case No. 2006.0868C.
[2] See Planning Commission Motion No. 18405, Case no. 2010.00420C.
[3] See Disconnected Youth In San Francisco: A Roadmap to Improve the Life Chances of San Francisco's Most Vulnerable Adults. Mayor's Transitional Youth Task Force, 2007.


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| Control | Permitted on Property | Project Features |
|---|---|---|
| Number of dwelling units[4] | Up to six units. | One unit. |
| Front setback[5] | 13.5 feet. | 27 feet. |
| Side yard[6] | No side yard required. | 6 feet to southern property line. |
| Height limit[7] | 40 feet. | 31.5 feet. |
| Rear yard[8] | 24.75 feet. | 24.75 feet. |

Ms. Clarke decided to utilize a fire-rated roof instead of a 30-inch parapet—which would itself be well within the 40-foot height limit—allowing the rear addition to have a lower overall profile. The DR does not dispute the Project's consistency with the applicable zoning requirements or Residential Design Guidelines. This is adequate reason to deny the DR.

With the addition, Ms. Clarke's home would be similar in size to others on her block. 1030 Broderick, located immediately to the south of the Property, underwent a rear addition similar in depth and height to the Project.[9] Currently, Ms. Clarke's home is the smallest unit on her block—smaller than each of the five condo units located to the north of the Property. The rear addition would make it comparable in size to other single-family homes on the block, which average 2,811 sq. ft. in size. (See **Exhibit B**.) The Project would create a floor-area ratio ("FAR") of 0.87:1, compared to a FAR of 1.18:1 for the Eddy Street Condos and a 1.19:1 FAR for the four parcels on the block with frontages on Broderick Street. The Project would be consistent with the block's existing rear yard pattern (see **Exhibit C**).

## IV. The Project's Impacts Are Minimal

In dense urban environments, minor shading of adjacent properties is unavoidable and is not an exceptional circumstance warranting DR. A shadow study demonstrates that the rear addition would minimally increase shadows on the Eddy Street Condos during the fall and winter months only. In the simplest terms, it would mean that the two western units in the development would experience conditions similar to those now existing in the easterly units. A peer-reviewed

[4] San Francisco Planning Code, 209.1.
[5] San Francisco Planning Code, 132 (permitting a setback equal to ½ the front setback of an adjacent building if there is only one adjacent building).
[6] San Francisco Planning Code § 133.
[7] San Francisco Planning Code, 252.
[8] San Francisco Planning Code § 134.
[9] Building Permit No. 9002372.


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solar efficiency study estimated that the addition would increase annual heating costs by an average of $40 per unit—an amount that Ms. Clarke offered to pay for twenty years but the Appellant rejected.

*a. The Project's Minimal Shadow Impacts Would Be Seasonal*

The Project will have no effect on the Condos' rooftop solar panels. A solar hot water array and a wall of south-facing windows (the "Window Wall") power a passive solar system in the Condos. The Project's seasonal shadow impact is demonstrated to be minimal, partially shading each unit for one or two hours a day.

The shadow study attached as **Exhibit D** demonstrates that from April 1 until September 14, the Project would have no impact on adjacent buildings whatsoever. Shadows caused by the Project would gradually increase starting on September 15 until December 21, and then gradually decrease before disappearing on March 28. On September 15, the shadow would affect the ground floor for only two of the five condominiums, for a total of three hours. On the day of maximum impact, December 21, it appears the rear addition would shade approximately 10-15% of total surface area of the Window Wall before 2 p.m. At the time of maximum impact, the Project would increase the shadow on one condominium for a total of one hour. For each of the other four condos, the additional shadow would last about two hours and all units would continue to receive several hours of direct sun. Additionally, during the hours of shade and sun the solar spaces will continue to be bright and flooded with light.

In fact, the architect who designed the Eddy Street Condos and Window Wall likely recognized that adjoining conditions may change. The Condos are built directly on the property line fronting Eddy Street. They provide no front yard setback, which creates a rear yard of approximately 2,450 square feet, with the Condos set back 24.5 feet from Ms. Clarke's property. The window wall on each condominium—which extends three stories—is angled to maximize sunlight exposure, independent of neighboring properties.

*b. Passive Solar Systems are Not Protected Under State or Local Law*

There is no legal basis for requiring modifications to the Project on the ground it would shade a fraction of the Window Wall during certain months of the year. The California Solar Shade Control Act ("Act") prohibits trees and shrubs from shading more than ten percent of *active* solar collectors. It does not apply to the passive solar systems such as the Window Wall, and does not extend its protection to shade caused by new structures built on adjacent properties.

The San Francisco Board of Supervisors also declined to provide legal protection to solar arrays, whether active or passive. Legislation proposing to require conditional use authorization for projects that shaded solar systems registered with the city was tabled, due to the far-reaching impact it could have had on adjacent property owners, in particular the difficulty of providing advance notice to property owners whose rights would be impacted by installing solar arrays.


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Both the city and state have considered the issue and declined to adopt rules for situations like this one. The Planning Commission should not do so on an *ad hoc* basis, particularly when the attached sunlight study and solar efficiency study (discussed below) demonstrate there will be no dramatic reduction in solar energy or energy costs.

*c. The Project Will Not Result in a 50 Percent Power Reduction to the Passive Solar System*

A peer-reviewed solar efficiency study demonstrates that, contrary to the claim in the DR request, the Project would have a minimal effect on the Condos' annual natural gas consumption. (See Group **Exhibit E**.) The study explains the increase in natural gas consumption that would result from the minor loss of direct sunlight caused by the Project. Based on a $1.15/therm. cost of residential retail natural gas, the following scenarios were projected:

| | ***Eddy Street Units*** | | | | | |
|---|---|---|---|---|---|---|
| ***Est. Increase*** | Unit 1 | Unit 2 | Unit 3 | Unit 4 | Unit 5 | Total |
| Low | $2.93 | $9.78 | $24.20 | $36.83 | $38.17 | $111.91 |
| Average | $4.99 | $16.63 | $41.18 | $62.66 | $64.94 | $190.40 |
| High | $6.93 | $23.12 | $57.24 | $87.10 | $90.27 | $264.66 |

Ms. Clarke first offered to compensate her neighbors for 10 years of estimated increased energy costs by making a payment to the Condos' HOA. She also offered to provide a matching donation to the Cooking Project, a non-profit dedicated to teaching children and young adults fundamental cooking skills. The Appellant rejected this offer. After this offer was rejected Ms. Clarke offered to compensate her neighbors for 20 years of estimated increased energy costs. This offer was also rejected.

## IV. Appellant's Proposed Alternatives are Not Reasonable

Appellant proposed Ms. Clarke eliminate the back ten feet of the top floor. This would require 29% percent of the lot to be open at the top floor – 4 percent more than required by zoning. It would be equivalent to imposing an approximately 25-foot height limit at the back of the property—15 feet lower than the 40 feet allowed.

The above result is not only unfair in the abstract, the result for Ms. Clarke would be punitive. Such a setback would not provide any corresponding benefit of increased sunlight to the Eddy Street Condos. A sunlight analysis using both a 5-foot and a 10-foot reduction in massing demonstrates that the already-minor shadows would not be noticeably decreased by either setback. (See **Exhibit F** and **Exhibit G**.) Shadows would still be cast for the same length of time each day. During maximum shading on December 21, the 5-foot setback would eliminate less than one half of one floor of shadow, and the 10-foot setback would at most


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eliminate up to one floor of shadow. The requested set back would defeat the purpose of the project, which is to accommodate at least two new people into Ms. Clarke's home, who deserve adequate living space. The set back would eliminate either a bedroom or study from the top floor, As previously stated, the second upstairs bedroom is intended for an underage foster child and the study is needed for Ms. Clarke as a home office when she takes on the responsibility of foster parenting.

## V. Conclusion

Ms. Clarke seeks a modest addition to her rear yard which is well within all existing zoning requirements. We urge the Commission to recognize Ms. Clarke's efforts to add a modest and wholly code-compliant rear addition on a challenging lot, for the purpose of providing housing for a foster child and children aging out of foster care. Ms. Clarke has attempted to work with her neighbors to address their concerns. Her architect has met with the association three times and she has offered to hold any additional meetings as requested. She commissioned three studies which demonstrate that the addition will cause minimal seasonal shadows which, on the date of maximum impact, will last for no more than two hours on each condominium unit. The Appellant's set back request is punitive to Ms. Clarke without providing any corresponding benefit of increased sunlight to the Eddy Street Condos.

Very truly yours,

REUBEN, JUNIUS & ROSE, LLP

Mark Loper

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## EXHIBIT LIST

| | | |
|---|---|---|
| Exhibit A | - | Approval Letter, San Francisco Architectural Heritage, dated 1/4/2013 |
| Exhibit B | - | Table of Adjacent Properties, by Type and Size |
| Exhibit C | - | Aerial Maps of Block Rear Yard Pattern, Existing and with Project |
| Exhibit D | - | 1040 Broderick Sunlight Analysis |
| Exhibit E | - | 1040 Broderick Solar Study and High and Low Estimates, dated September 12, 2013 |
| Exhibit F | - | 1040 Broderick Sunlight Analysis, With 5-Foot Setback |
| Exhibit G | - | 1040 Broderick Sunlight Analysis, With 10-Foot Setback |

A

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January 4, 2012

**Submitted by email**
Cass Smith
CCS Architecture
44 McLea Court
San Francisco, CA 94103
Email: bsteudte@ccs-architecture.com

**RE: 1040 Broderick Street**

Dear Mr. Smith,

On behalf of San Francisco Architectural Heritage (Heritage), thank you for your recent presentation to Heritage's Issues Committee regarding a proposed addition to 1040 Broderick Street. Under the terms of the façade easement on the property, Heritage is required to review and approve all modifications to the exterior of the building. The proposed project consists of a three-story rear addition, expanded living and dining space on the first floor, and a full master suite on the second floor. The existing use and the front elevation will remain unchanged.

The Issues Committee first reviewed this project on June 5, 2012. Although Heritage found the project to be in general conformity with the *Secretary of the Interior's Standards*, the committee requested a follow-up presentation after plans had been further refined. Accordingly, representatives of CSS Architecture presented more fully developed plans to Heritage on November 2, 2012.

Upon reviewing an updated set of plans, the Issues Committee expressed concern that the proposed addition was not sufficiently differentiated from the historic structure. Indeed, a central tenet of the *Secretary of the Interior's Standards* provides that new construction must be "differentiated from the old and…compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment."

After exploring various options with CSS, the Issues Committee approved the proposed project subject to the following modifications, which have since been adopted in the final plans:

- Retain the original gutter and side elevation downspout to clearly delineate where the historic building ends and the new addition begins.
- Install roof flashing on the addition with materials and dimensions that are distinct from, but complementary to the existing flashing.

- To reinforce the distinction between old and new, all original wood-frame, double-hung windows on the side elevations should be retained. Windows for the new addition should not match the originals.

Thank you again for presenting to Heritage's Issues Committee. Should you have any questions, please do not hesitate to contact Desiree Smith, preservation project manager, at dsmith@sfheritage.org or 415/441-3000x11.

Sincerely,

Mike Buhler
Executive Director

B

| NEIGHBORING PROPERTIES, by Square Footage and Residential Use Type | | |
|---|---|---|
| **Address** | **Square Footage** | **Type** |
| 1040 Broderick St. (current) | 1,213 sq ft | Single-family |
| 1968 Eddy St. | 1,250 sq ft | Single-family |
| 1850 Turk St. Apt 101 | 1,274 sq ft | Apartment |
| 1850 Turk St. Apt 201 | 1,274 sq ft | Apartment |
| 1059 Broderick St. | 1,500 sq ft | Single-family |
| 1878 Turk St. | 1,500 sq ft | Single-family |
| 1850 Turk St. Apt 102 | 1,688 sq ft | Apartment |
| 1850 Turk St. Apt 303 | 1,701 sq ft | Apartment |
| 1866 Turk St. | 1,740 sq ft | Single-family |
| 1030 Broderick St. | 1,787 sq ft | Single-family |
| 1850 Turk St. Apt 302 | 1,856 sq ft | Apartment |
| 1997 Eddy St. | 1,900 sq ft | Condo |
| 1989 Eddy | 1900 sq ft | Condo |
| 1981 Eddy | 1900 sq ft | Condo |
| 1973 Eddy | 1900 sq ft | Condo |
| 1965 Eddy | 1900 sq ft | Condo |
| 1941 Eddy St. | 2,186 sq ft | Multiple occupancy |
| 1980-1982 Eddy St. | 2,300 sq ft | Multiple occupancy |
| 1966 Eddy St. | 2,424 sq ft | Multiple occupancy |
| 1953-1955 Eddy St. | 2,550 sq ft | Multiple occupancy |
| 1040 Broderick St. (proposed) | 2403 sq. ft. | Single-family |
| 1100 Broderick St. | 3,385 sq ft | Single-family |
| 1844 Turk St. | 3,430 sq ft | Single-family |
| 1951 Eddy St. | 3,436 sq ft | Single-family |
| 1945 Eddy St. | 3,436 sq ft | Multiple occupancy |
| 1049 Broderick St. | 4,100 sq ft | Single-family |
| 1035 Broderick St. | 4,556 sq ft | Single-family |
| 1894 Turk St. | 6,695 sq ft | Multiple occupancy |
| 1880 Turk St. | 7,435 sq ft | Single-family |

| NEIGHBORING SINGLE-FAMILY PROPERTIES, by Square Footage | | |
|---|---|---|
| **Address** | **Square Footage** | **Type** |
| 1968 Eddy St. | 1,250 | Single-family |
| 1059 Broderick St. | 1,500 | Single-family |
| 1878 Turk St. | 1,500 | Single-family |
| 1866 Turk St. | 1,740 | Single-family |
| 1030 Broderick St. | 1,787 | Single-family |
| 1040 Broderick St. (proposed) | 2,403 | Single-family |
| 1100 Broderick St. | 3,385 | Single-family |

| | | |
|---|---|---|
| 1844 Turk St. | 3,430 | Single-family |
| 1951 Eddy St. | 3,436 | Single-family |
| 1049 Broderick St. | 4,100 | Single-family |
| 1035 Broderick St. | 4,556 | Single-family |
| 1880 Turk St. | 7,435 | Single-family |
| | | |
| | AVERAGE SIZE: 2,811 sq. ft. | |

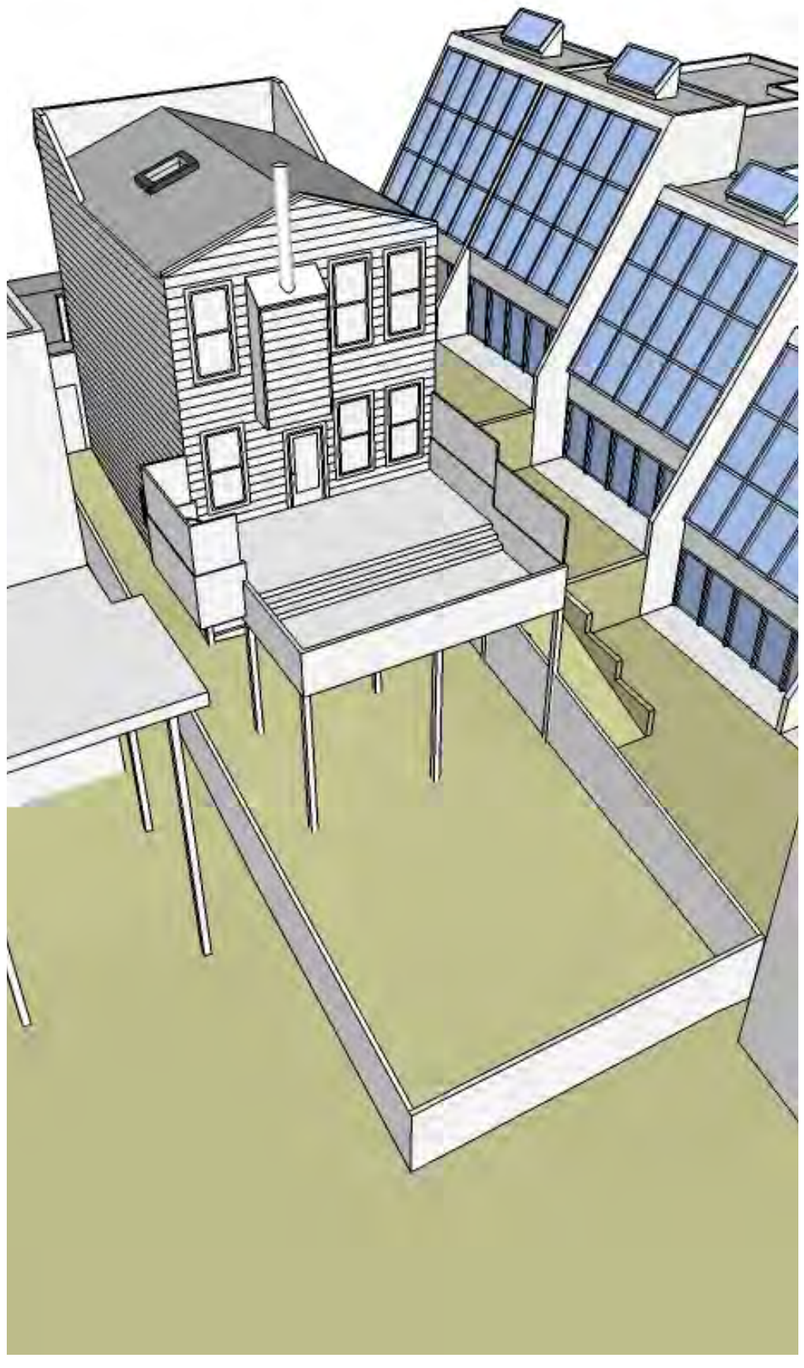
C


1040 Broderick St.
Turk St
© 2013 Google

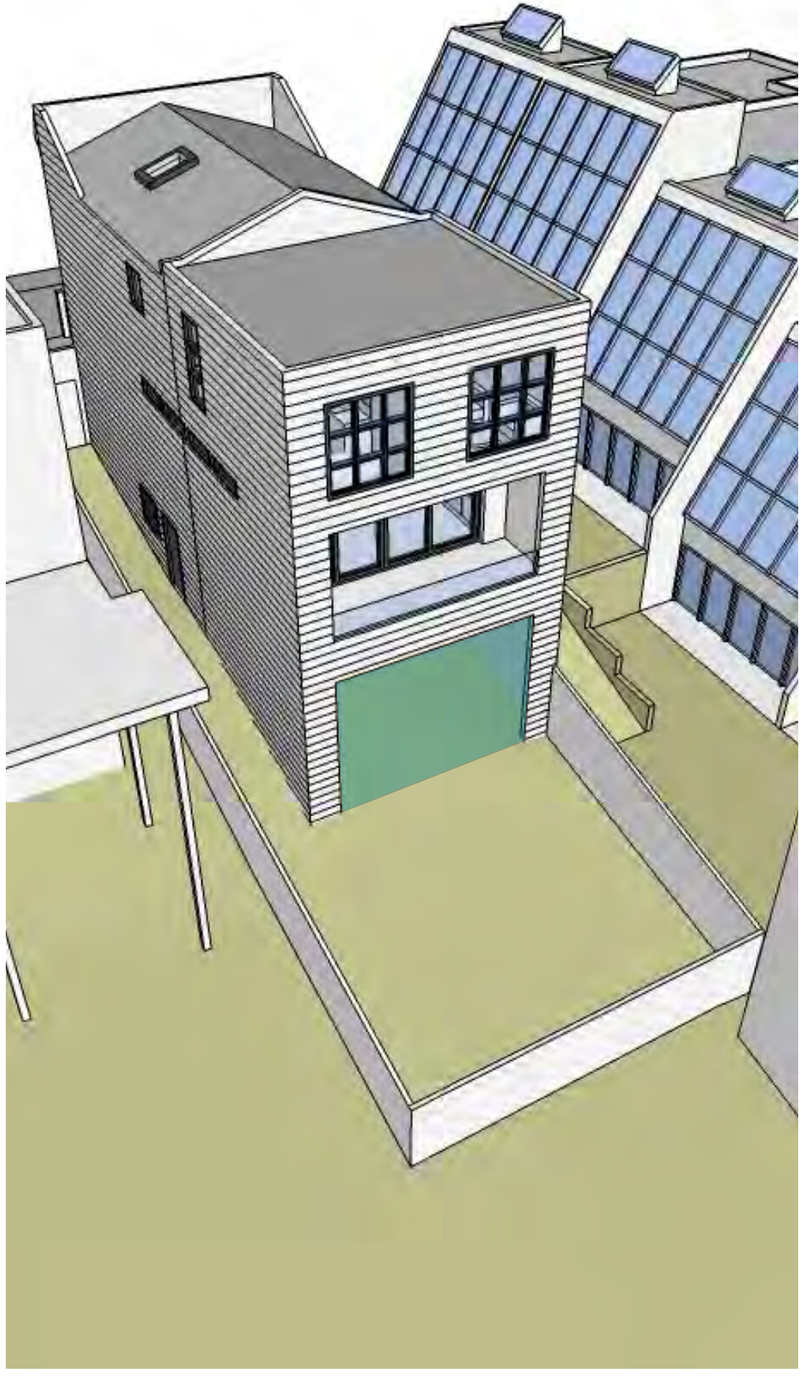

1040 Broderick St.
with addition
Turk St
© 2013 Google

D

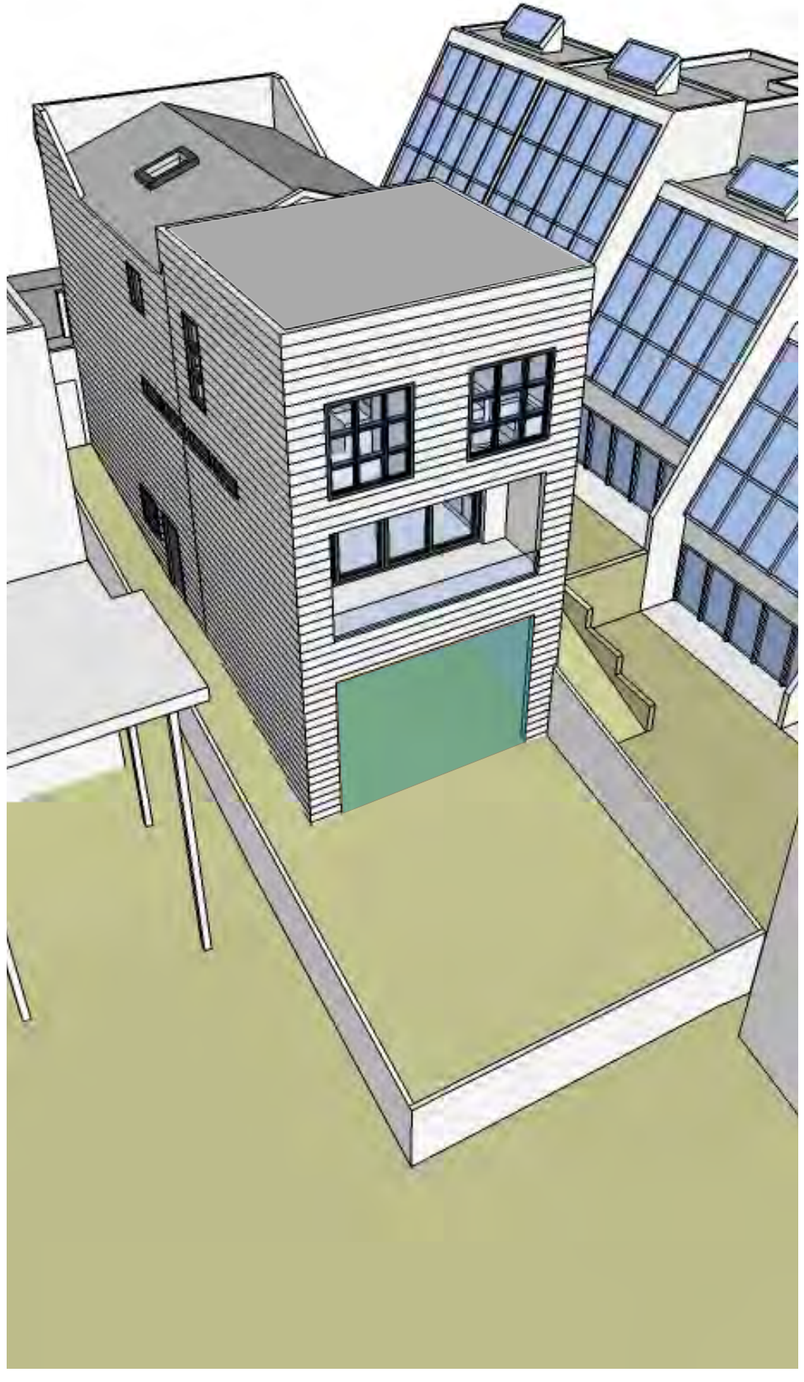
Existing



Proposed



High Ceiling



1040 Broderick Sunlight Analysis

Existing | Proposed | High Ceiling

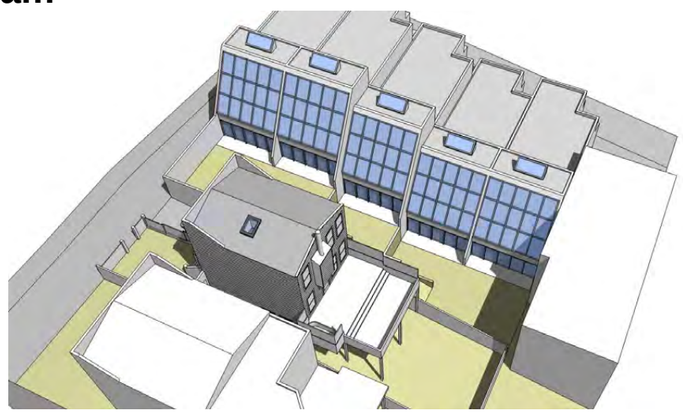
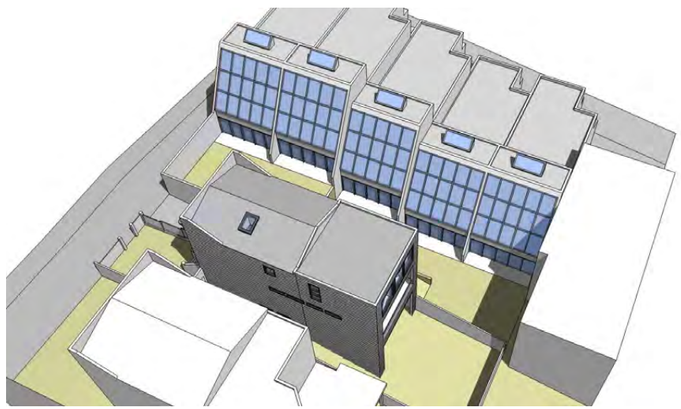
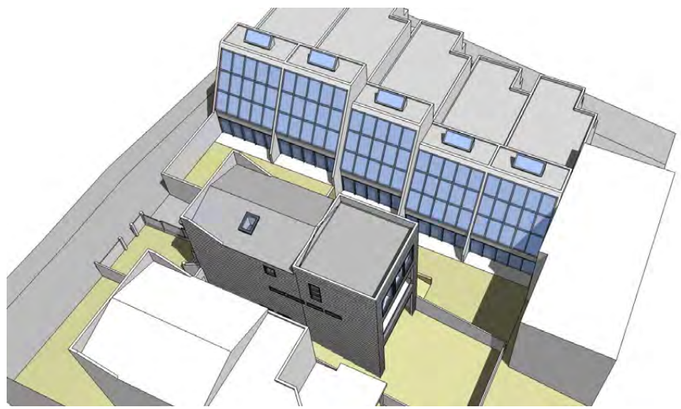
**8am**



**9am**



**10am**

**21st of June** | **21st of June**

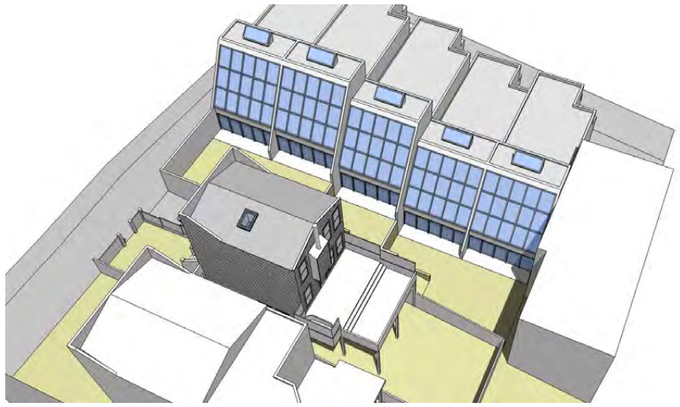
1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings**

Existing

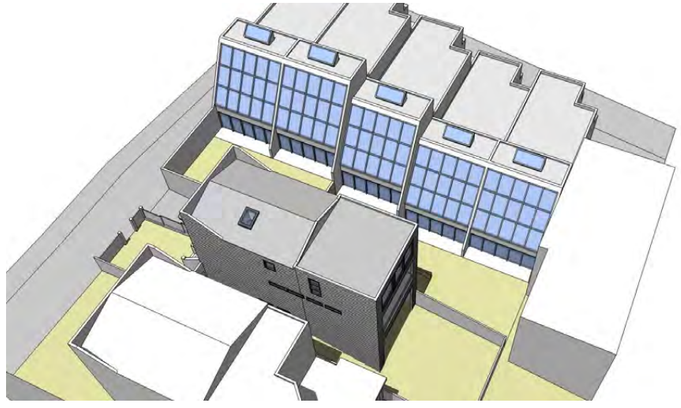
Proposed

High Ceiling

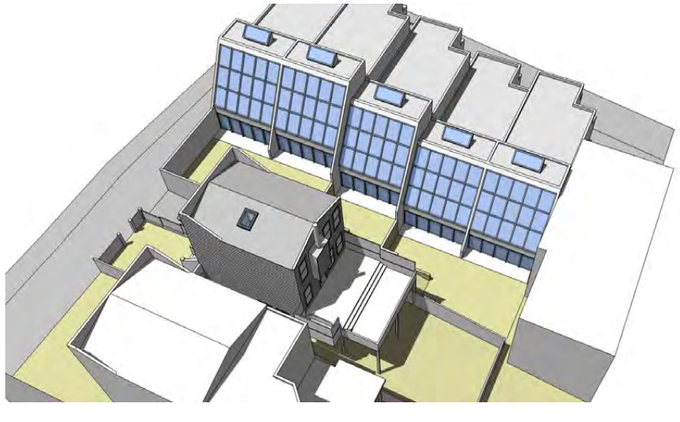
**11am**

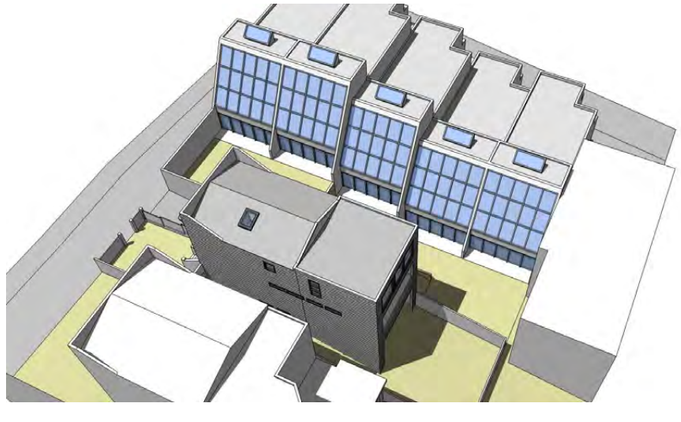


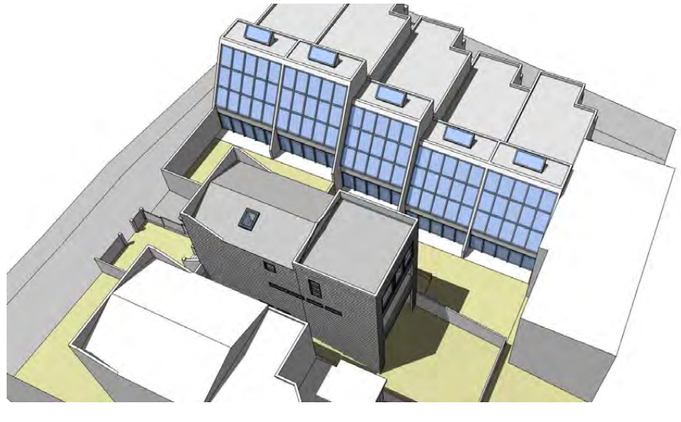
**12pm**



**1pm**







**21st of June**

**21st of June**

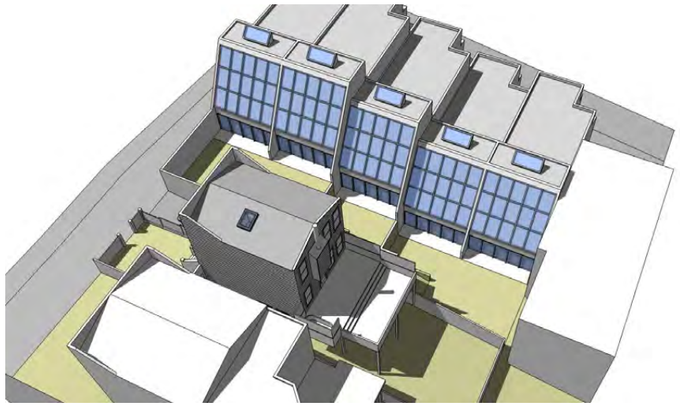
1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings**

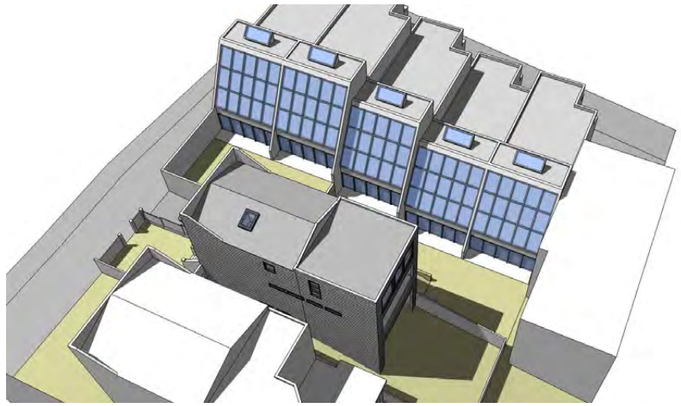
Existing

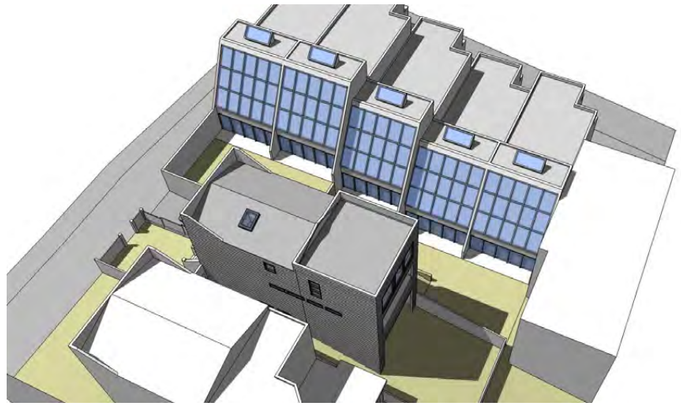
Proposed

High Ceiling

**2pm**







**3pm**

**4pm**

**21st of June**

**21st of June**

1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings**

Existing | Proposed | High Ceiling

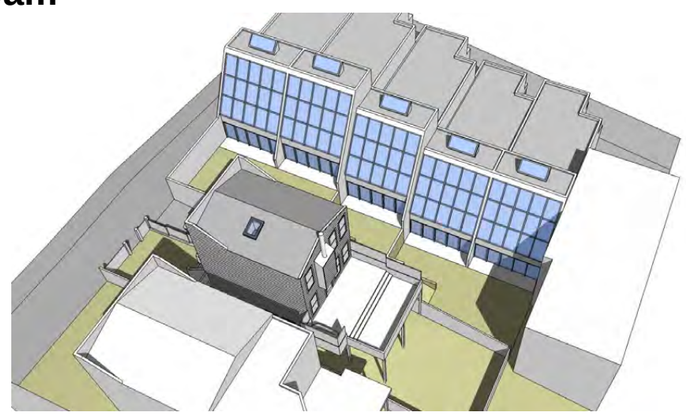
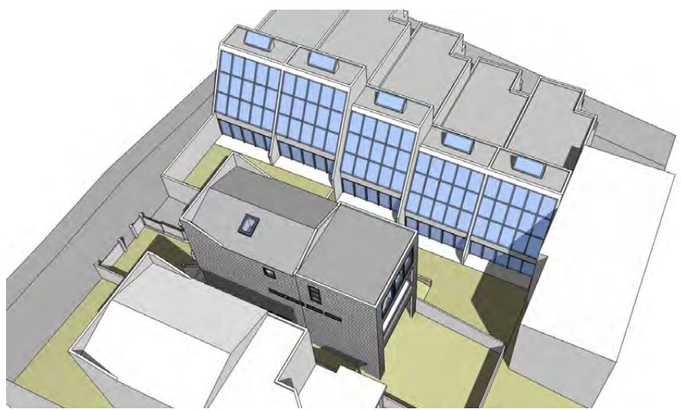
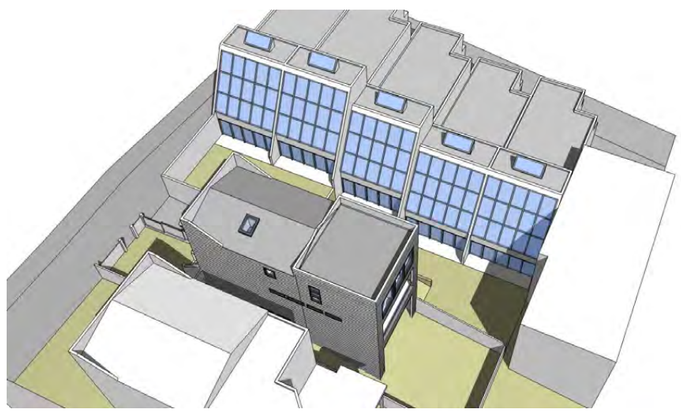
**8am**



**9am**



**10am**

**10th of April / 1st of September** | **14th of April / 28th of August**

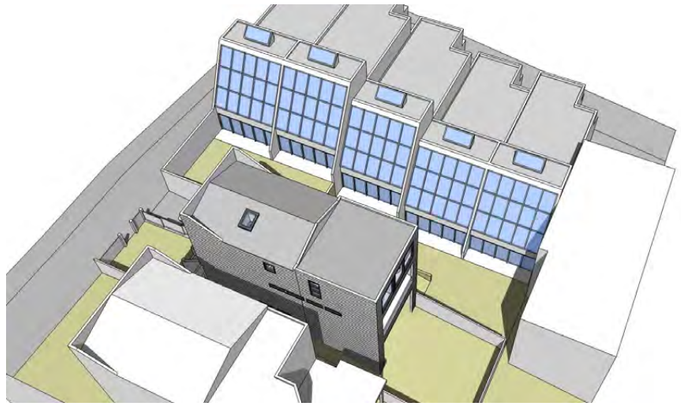
1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings (last dates)**

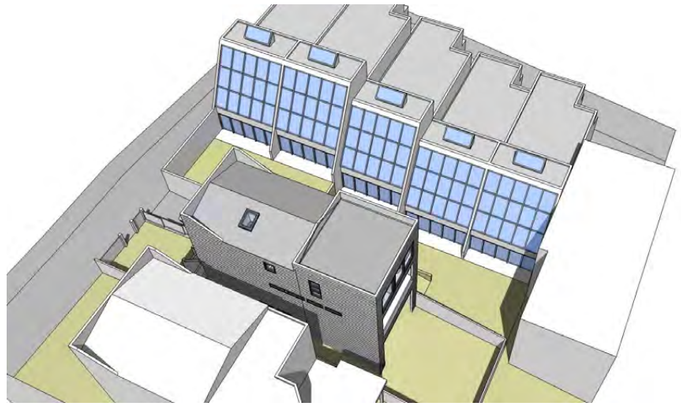
Existing

Proposed

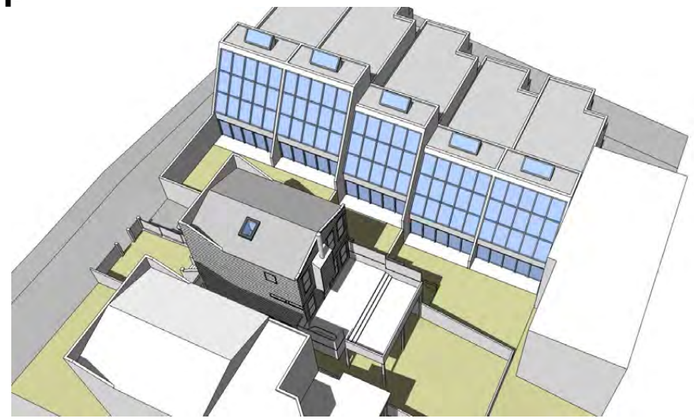
High Ceiling

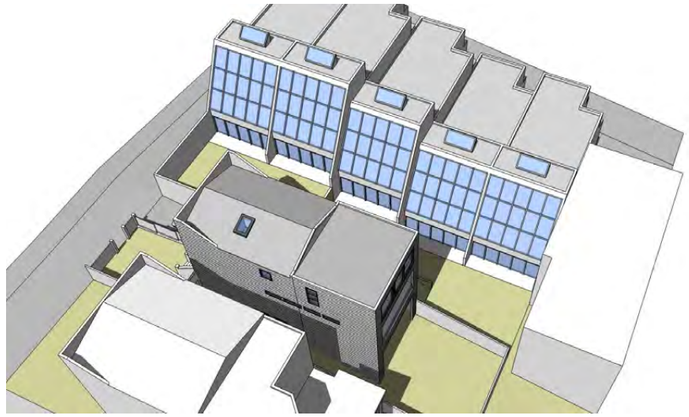
**11am**

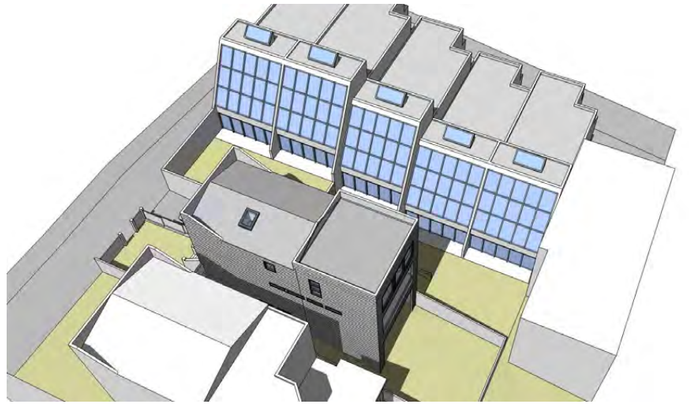




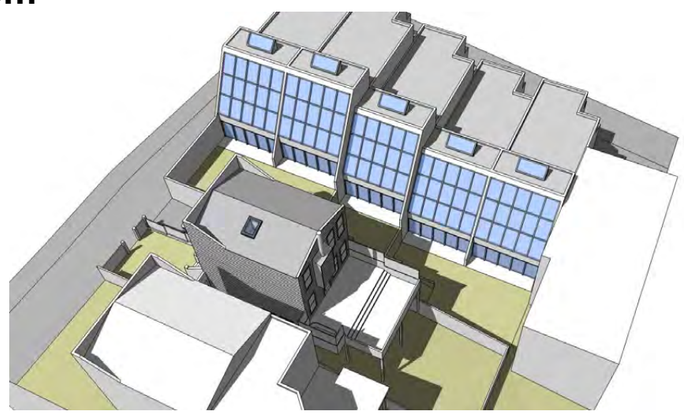
**12pm**







**1pm**



**10th of April / 1st of September**

**14th of April / 28th of August**

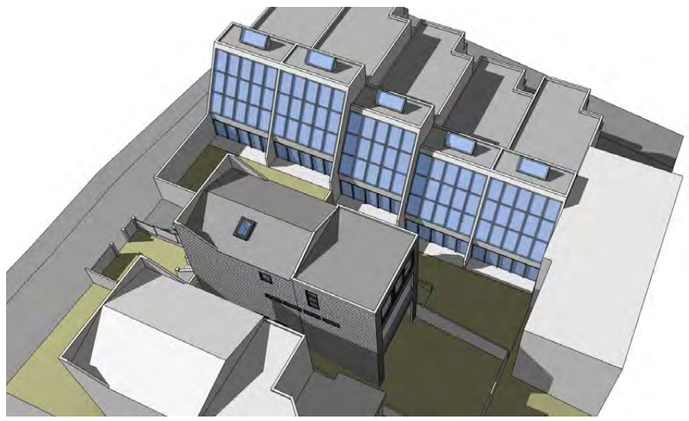
1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings (last dates)**

Existing | Proposed | High Ceiling

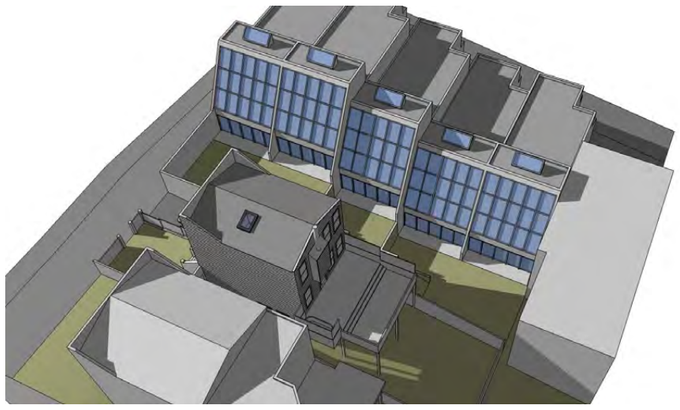
**2pm**

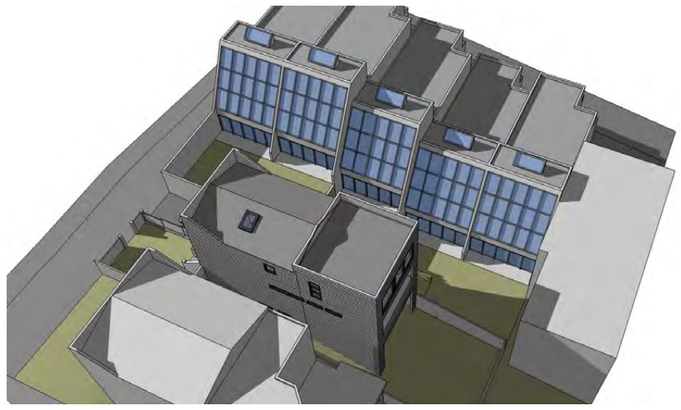


**3pm**


**4pm**





**10th of April / 1st of September** | **14th of April / 28th of August**

1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings (last dates)**

Existing

Proposed

High Ceiling

**8am**

**9am**

**10am**

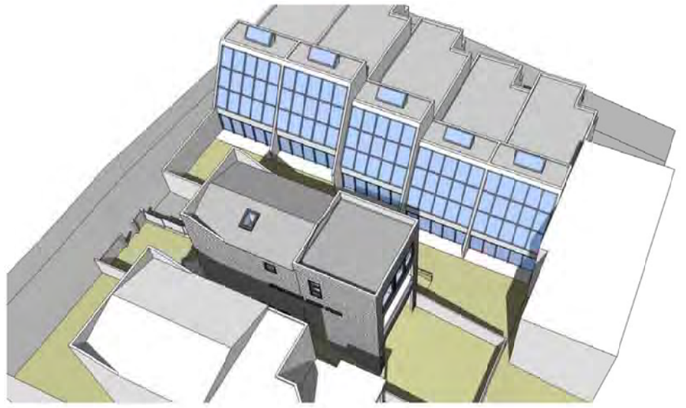
**21st of March / September**

**27th of March / 15th of September**

1040 Broderick Sunlight Analysis - **Start of minimum solar impact on angled glazing**

Existing | Proposed | High Ceiling

**11am**

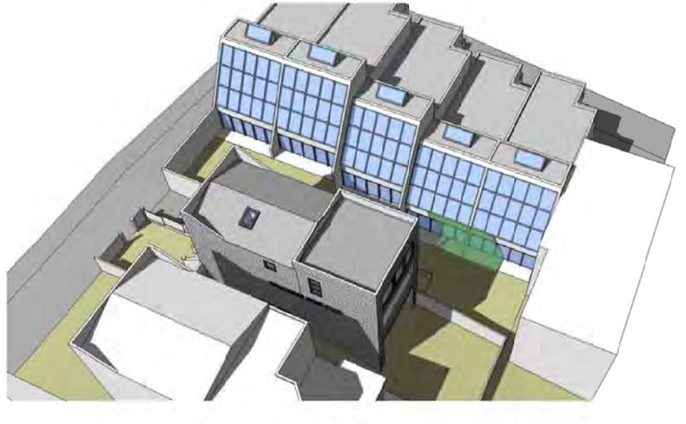


**12pm**

**Impact**

**1pm**

**Impact**



**21st of March / September**

**27th of March / 15th of September**

1040 Broderick Sunlight Analysis - **Start of minimum solar impact on angled glazing**

Existing

Proposed

High Ceiling

**2pm**

**Impact**

**3pm**

**4pm**

**21st of March / September**

**27th of March / 15th of September**

1040 Broderick Sunlight Analysis - **Start of minimum solar impact on angled glazing**

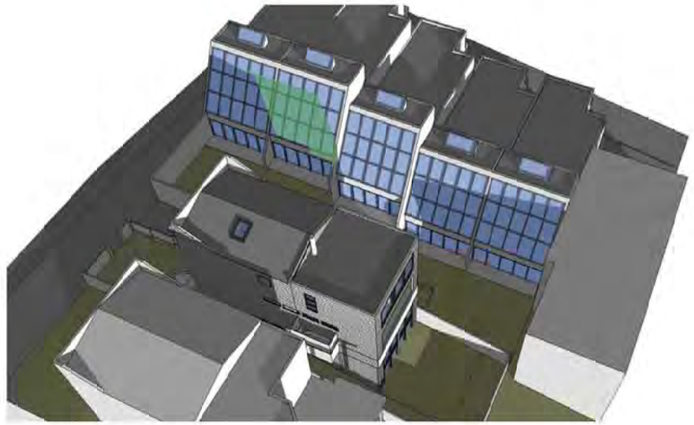
Existing

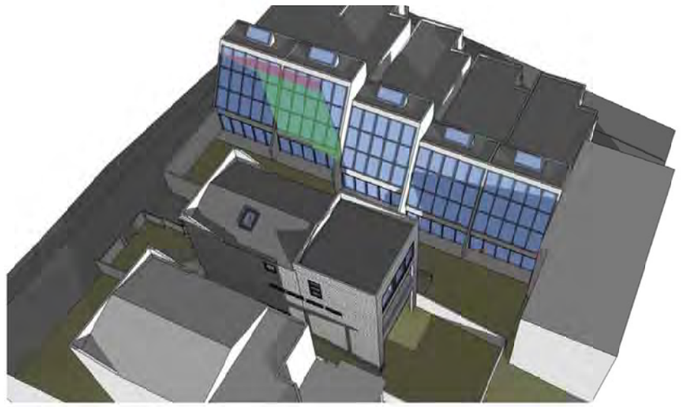
Proposed

High Ceiling

**8am**

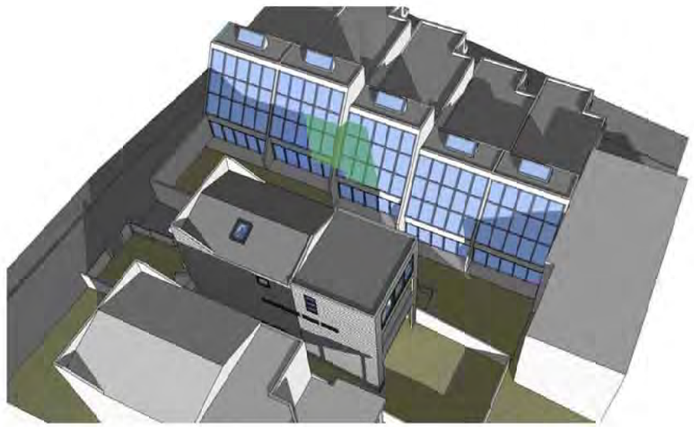
**Impact**

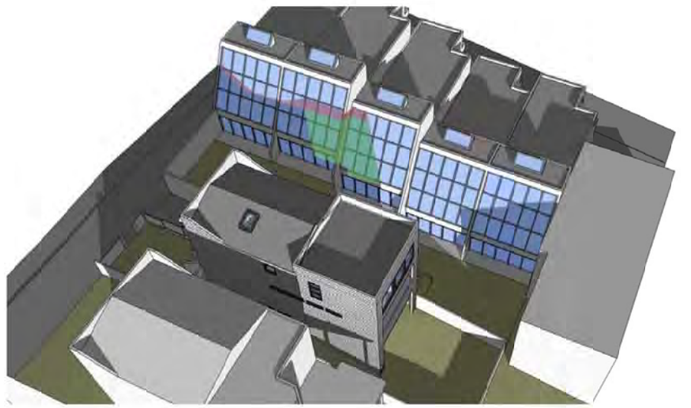




**9am**

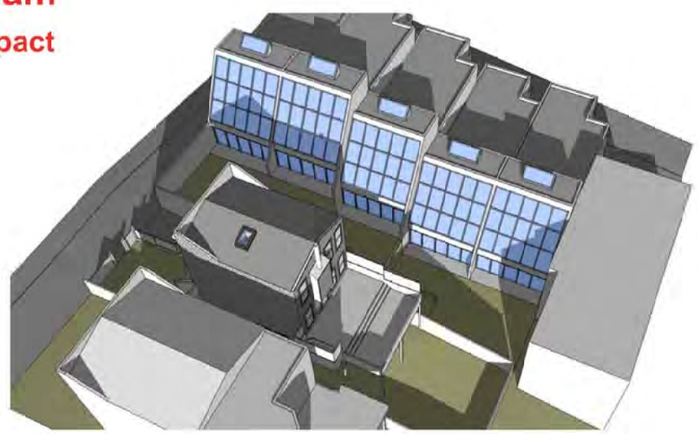
**Impact**

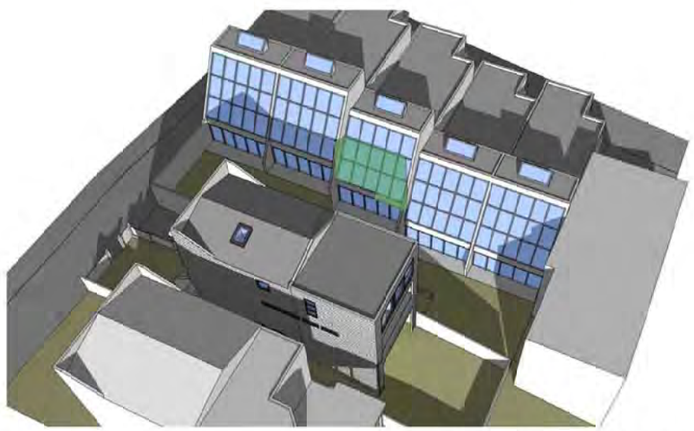




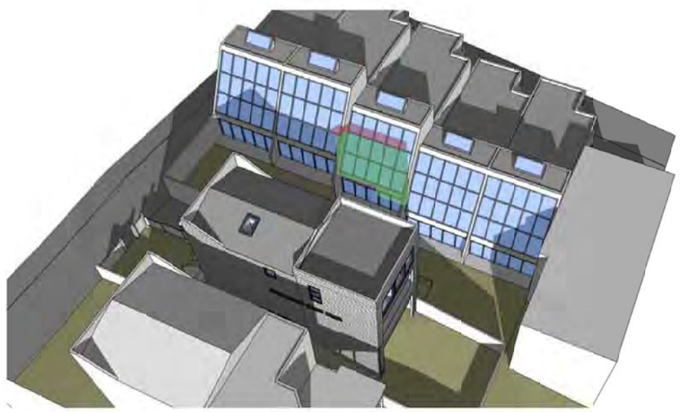
**10am**

**Impact**





**21st of December**



**21st of December**

1040 Broderick Sunlight Analysis - **Date of maximum solar impact on adjacent buildings**

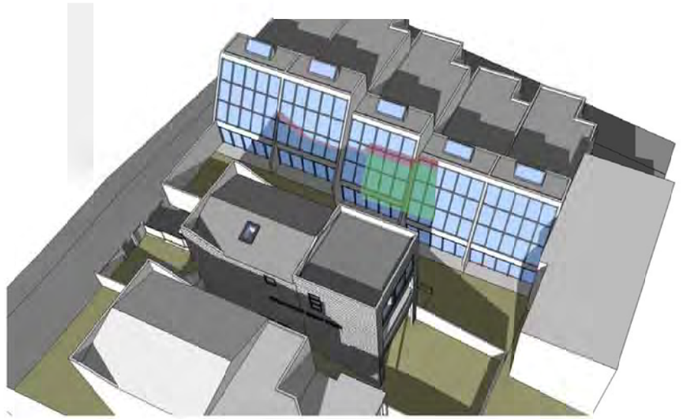
Existing

Proposed

High Ceiling

**11am**

**Impact**



**12pm**

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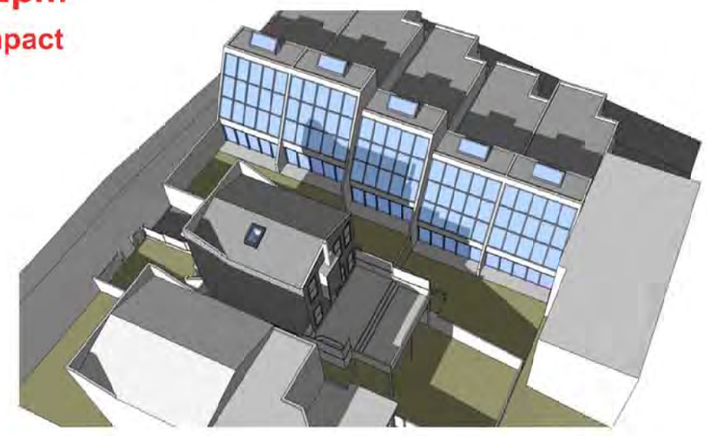
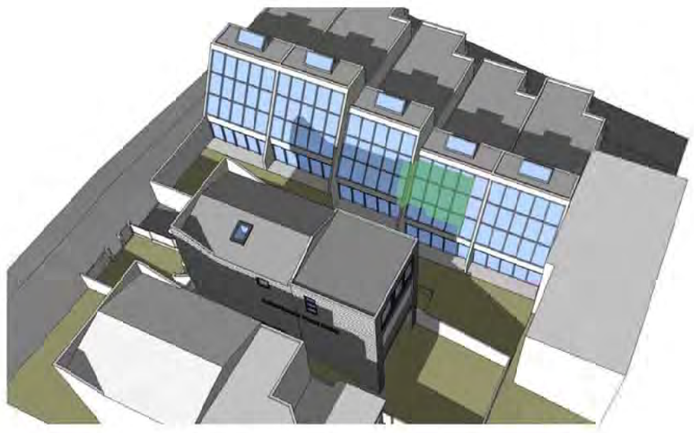




**1pm**

**Impact**

**21st of December**

**21st of December**

1040 Broderick Sunlight Analysis - **Date of maximum solar impact on adjacent buildings**

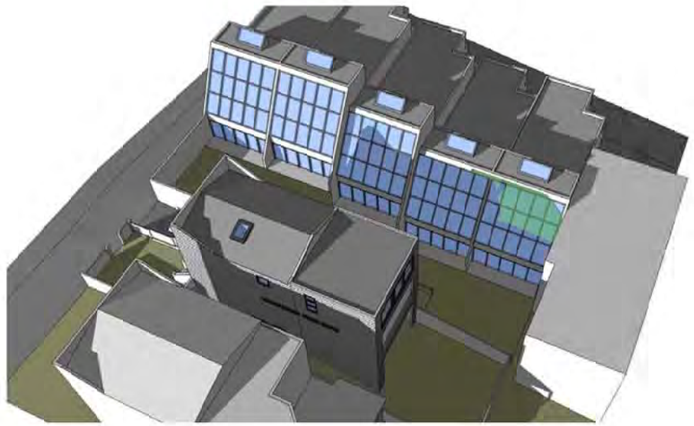
Existing

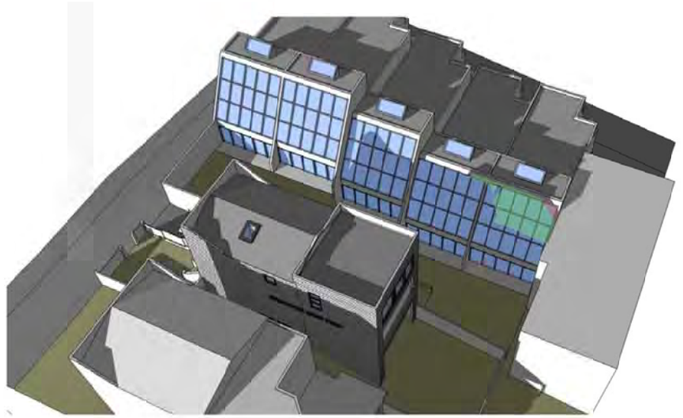
Proposed

High Ceiling

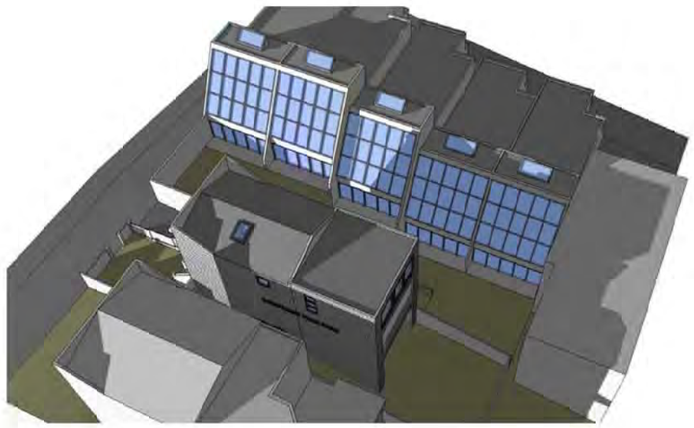
**2pm**

**Impact**

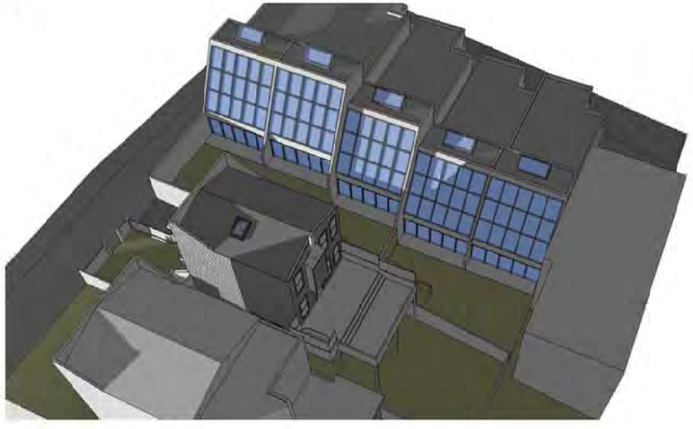


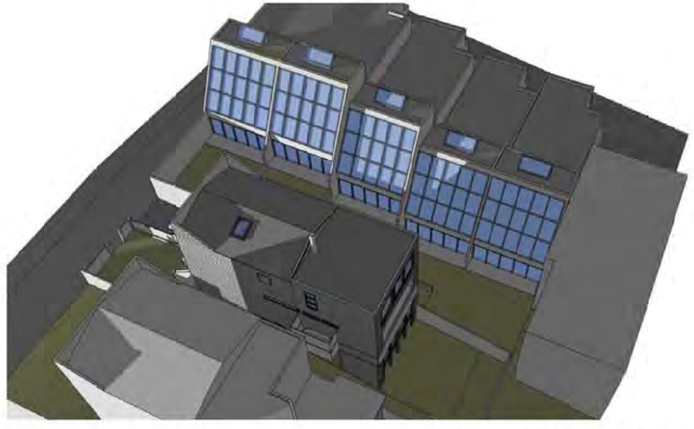


**3pm**



**4pm**





**21st of December**

**21st of December**

1040 Broderick Sunlight Analysis - **Date of maximum solar impact on adjacent buildings**

E

# Dan Johnson Design and Energy

Dan Johnson, M.Arch | Assoc. AIA, ASHRAE, CEPE, CPHC, LEED AP
5500 Kales Avenue, Oakland, California 94618
mobile: 510.325.5672  danjoh99@gmail.com

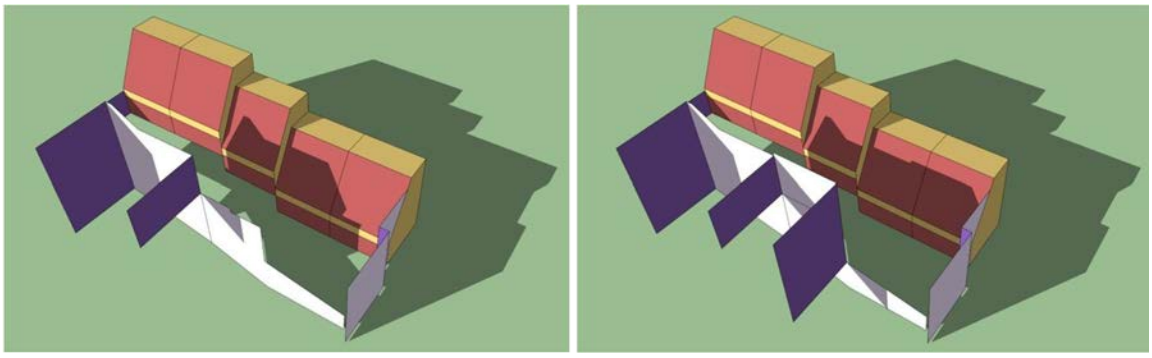

Date: Sept 12, 2013
Project: 1040 Broderick Residence, San Francisco, CA 94115 – Neighbors' Solar Study

## Introduction

The following report explains a calculated estimate of the amount of obstructed sun from the proposed addition, and resulting increase in natural gas consumption in the affected units. Results were broken out separately for each of five residential units affected, since they are affected differently.

## Methods

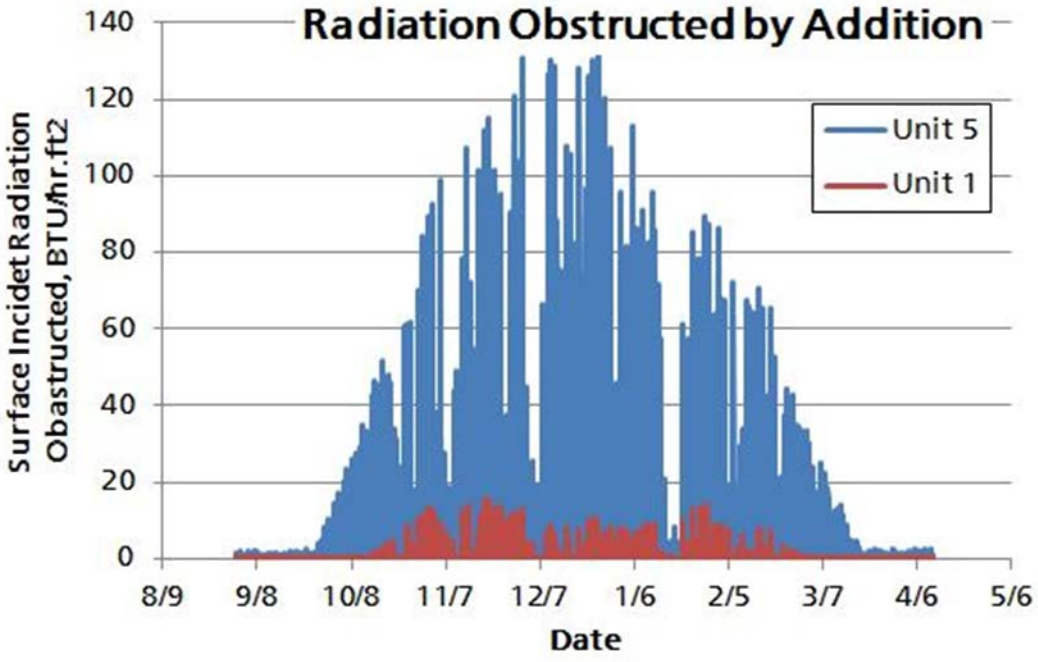
A simplified 3D model was constructed in SketchUp v8 Pro with only the important surfaces. The model is drawn using the Legacy EnergyPlus plug-in v.1.0.10.406 and is readable by the energy simulation program EnergyPlus v8.0.1. One model was made for the Baseline Existing Condition (below left), and one for the Proposed Addition (below right).



The affected units (sunspace glass shown in red above) are labeled, from left to right (west to east): Unit 1, 2, 3, 4, 5. Each affected unit has a large, south-facing glass window tilted at 60° to horizontal, and a smaller window tilted at 90°.

EnergyPlus ran hour-by-hour for the time period September 1 to April 10. For each hour, the program re-calculated the locations of building shadows upon the affected units. The program then used historical average solar radiation data from the San Francisco Int'l Airport TMY3 weather file[1] to determine the solar radiation incident upon the exterior glazed surfaces of the affected units, with consideration of shadows from that hour. The program recorded the radiation in units of BTU/hr.ft$^2$, then moved on to the next hour. The simulation only computed and recorded the radiation upon the windows, it did not compute the building's response to the solar gain, such as running the heater.

The Proposed Addition case showed less radiation on the affected units than the Baseline case. The Proposed hourly values were subtracted from the Baseline Existing Condition case to create a table of hourly differences (Appendix 1). This table is a summary of obstructed radiation due to the proposed addition. A subset of this data is graphed below:




The chart above shows hourly shadows on Unit 1 and Unit 5 through the simulation time period. These units are the least- and most-affected by the proposed addition, respectively. For reference, an adult human at rest emits ~240 BTU/hr of heat. The darkest shadows are blocking half a human body's heat (~120 BTU/hr) per square foot of sunspace glass. The gaps in the graph indicate cloudy days where there is no difference in shadows between the existing conditions and the proposed case. The highest peaks indicate bright days with the lowest sun angles when the difference is most pronounced.

**Equation used in this study**

To get from obstructed radiation to an estimated increase in heating fuel, one must use a series of conversion factors. The factors will be the most debatable part of the study so they are made explicit. The factors presented below are best guesses from experience. Readers may easily adjust the factors and recalculate the corresponding change in heating cost.

(An alternative approach would be to perform a detailed hourly simulation of the affected units' response to solar conditions, and have the software compute the hourly furnace run-time and report the increase in heating fuel. Doing this would require estimates for many more parameters than the four given below: such as insulation values, duct leakage, and infiltration rates. The resulting model would then be calibrated against past utility bills to ensure accuracy. This simulation would be much more time consuming, invasive, and expensive to prepare. Additionally, the parameters would be buried in the simulation engine and less transparent to readers.)

(Total annual obstructed radiation, kBTU/yr)
x (Solar Heat Gain Coefficient SHGC of sunspace glazing, %)
x (Sunspace Efficacy, %)
x (Utilization Factor, %)
÷ (Furnace efficiency, AFUE, %)
x (1 therm/100 kBTU)
= (Natural gas increase, therms/yr)

## Terms described:

Total annual obstructed radiation, kBTU/yr is the annual sum of each hour: (Obstructed radiation power, BTU/hr.ft$^2$ as given by the difference in EnergyPlus reports between Baseline and Proposed Addition) x (1 hour time-step) x (Area of sunspace glazing, ft$^2$, taken from SketchUp model provided by CCS Architecture)

Solar Heat Gain Coefficient SHGC of sunspace glazing is a value ranging from 0.0 to 1.0 indicating how much solar thermal energy penetrates the glass. Typical glass values are 0.83 (old single-pane, thin frame) to 0.25 (modern low-e coatings and larger wood frame). Energy that does not penetrate is reflected or emitted back to the exterior.

Sunspace Efficacy is a value ranging from 0.0 to 1.0 indicating how effectively the sunspace transfers captured solar heat to the living space and thermal storage bin. Values less than 1.0 indicate that useful heat is lost between the sunspace and living space. For example, heat absorbed by materials in the sunspace is re-radiated to outdoors at night and never offsets gas heating in the house interior.

Utilization Factor is a value ranging from 0.0 to 1.0 indicating how much of the solar heat delivered by the sunspace to the interior is useful for space heating. For example, solar heat captured on a sunny afternoon in Spring when the affected unit is already warm, and its thermal storage bin is already charged, cannot be utilized for future space heating. A shadow during these hours would not deprive the building of useful energy; a shadow may actually help with cooling. Increasing thermal storage capacity would increase the Utilization Factor, since more potentially wasted energy could be stored for future use. Typical values for passive solar homes are 0.55 to 0.85. In this study, an average Utilization Factor for the entire heating season is assumed.

Furnace Efficiency, Annual Fuel Utilization Efficiency (AFUE) is a standard rating for gas furnaces describing output/input; the ratio of useful heat delivered over fuel energy consumed. Typical values are ~93% for modern condensing furnaces to <75% for vintage furnaces with leaky ducts located in unconditioned space. To deliver 1 BTU of heat to the interior, a 75% AFUE furnace must consume 1 ÷ 0.75 = 1.33 BTUs of natural gas. In this study, "Furnace Efficiency" includes all duct losses and will be lower than a manufacturer's stated AFUE.

A Therm of natural gas is defined as 100,000 BTUs. A Therm typically describes the input quantity of gaseous fuel to the furnace, rather than the output quantity of heat, which is described in BTUs.

## Results

Calculations were performed in the attached spreadsheet Appendix 1.

The following values were chosen as the most realistic based on experience:

| | |
|---|---|
| Window SHGC | 0.75 (sunspace glass is high gain) |
| Utilization Factor | 0.75 (passive design, little overheating in heating season) |
| Sunspace Efficacy | 0.85 (only 15% losses to exterior) |
| Furnace Efficiency AFUE | 0.75 (typical, and even optimistic, for "80% AFUE" furnace) |

The following are calculated estimates for increased natural gas consumption to make up for solar radiation obstructed by the proposed addition:

| Unit: | Unit 1 | Unit 2 | Unit 3 | Unit 4 | Unit 5 |
|---|---|---|---|---|---|
| Therms/yr: | 4.3 | 14.5 | 35.8 | 54.5 | 56.5 |

The residential retail price of natural gas is estimated at **$1.15/therm**. This gives the following marginal heating cost increases:

| Unit: | Unit 1 | Unit 2 | Unit 3 | Unit 4 | Unit 5 |
|---|---|---|---|---|---|
| $/yr cost increase: | $4.99 | $16.63 | $41.18 | $62.66 | $64.94 |

## Notes

1. A Typical Meteorological Year (TMY3) weather file describes a long-term average weather year. San Francisco International Airport, TMY3 weather file. Retrieved from http://apps1.eere.energy.gov/buildings/energyplus/cfm/weather_data3.cfm/region=4_north_and_central_america_wmo_region_4/country=1_usa/cname=USA#CA

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Date: Sept 12, 2013
Project: 1040 Broderick Residence, San Francisco, CA 94115 – Neighbors' Solar Study

## High and Low Estimates

The following supplement provides a calculated estimate of the highest and lowest plausible bounds for the increase in natural gas consumption in the affected units. Please refer to the Final Report for a narrative of methods used.

Calculations were performed in the attached spreadsheet Appendix 1.

## Scenario #1: Highest Plausible Increase in Gas Consumption

In this scenario, the sunspace is extremely effective at delivering heat to the house interior; the house and its thermal storage bin can nearly always store more heat, even after a period of several sunny days; the furnace has poor efficiency and wastes a lot of gas to deliver useful heat. The following values were used:

| | |
|---|---|
| Window SHGC | 0.80 (sunspace glass is very high gain) |
| Utilization Factor | 0.80 (passive design, little overheating in heating season) |
| Sunspace Efficacy | 0.90 (only 10% losses to exterior) |
| Furnace Efficiency AFUE | 0.65 (underperforming "80% AFUE" furnace) |

The following are calculated estimates for increased natural gas consumption to make up for solar radiation obstructed by the proposed addition:

| Unit: | Unit 1 | Unit 2 | Unit 3 | Unit 4 | Unit 5 |
|---|---|---|---|---|---|
| Therms/yr: | 6.0 | 20.1 | 49.8 | 75.7 | 78.5 |

The residential retail price of natural gas is estimated at **$1.15/therm**. This gives the following marginal heating cost increases:

| Unit: | Unit 1 | Unit 2 | Unit 3 | Unit 4 | Unit 5 |
|---|---|---|---|---|---|
| $/yr cost increase: | $6.93 | $23.12 | $57.24 | $87.10 | $90.27 |

## Scenario #2: Lowest Plausible Increase in Gas Consumption

In this scenario, the sunspace is moderately effective at delivering heat to the house interior; the house and its thermal storage bin quickly become saturated and can't store more heat, especially after a period of several sunny days; the furnace has been replaced recently and has "90% AFUE" efficiency. The following values were used:

| | |
|---|---|
| Window SHGC | 0.70 (sunspace glass is moderately high gain) |
| Utilization Factor | 0.65 (sunspace and home often overheat after sunny days) |
| Sunspace Efficacy | 0.70 (30% losses to exterior) |
| Furnace Efficiency AFUE | 0.85 (typical for "90% AFUE" furnace, very well installed) |

The following are calculated estimates for increased natural gas consumption to make up for solar radiation obstructed by the proposed addition:

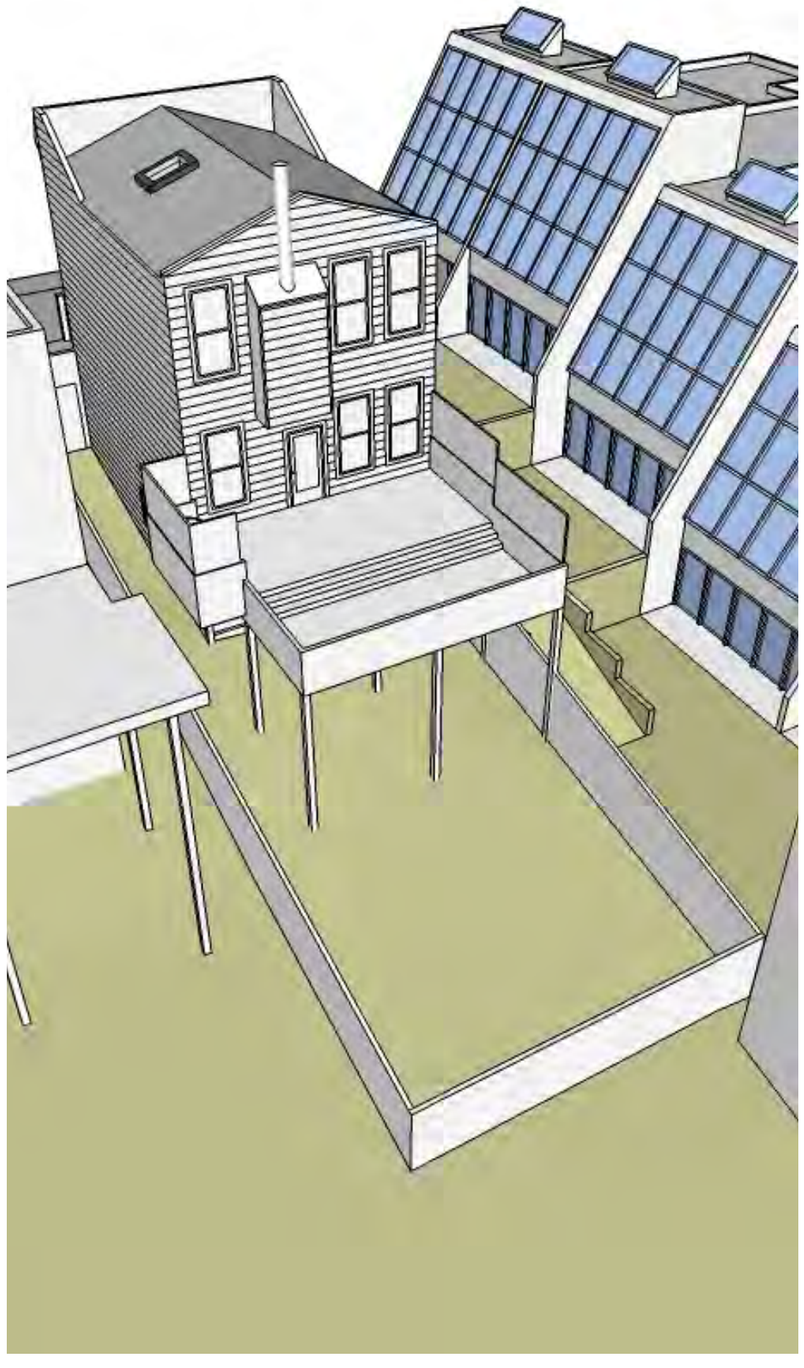
| Unit: | Unit 1 | Unit 2 | Unit 3 | Unit 4 | Unit 5 |
|---|---|---|---|---|---|
| Therms/yr: | 2.5 | 8.5 | 21.0 | 32.0 | 33.2 |

The residential retail price of natural gas is estimated at **$1.15/therm**. This gives the following marginal heating cost increases:

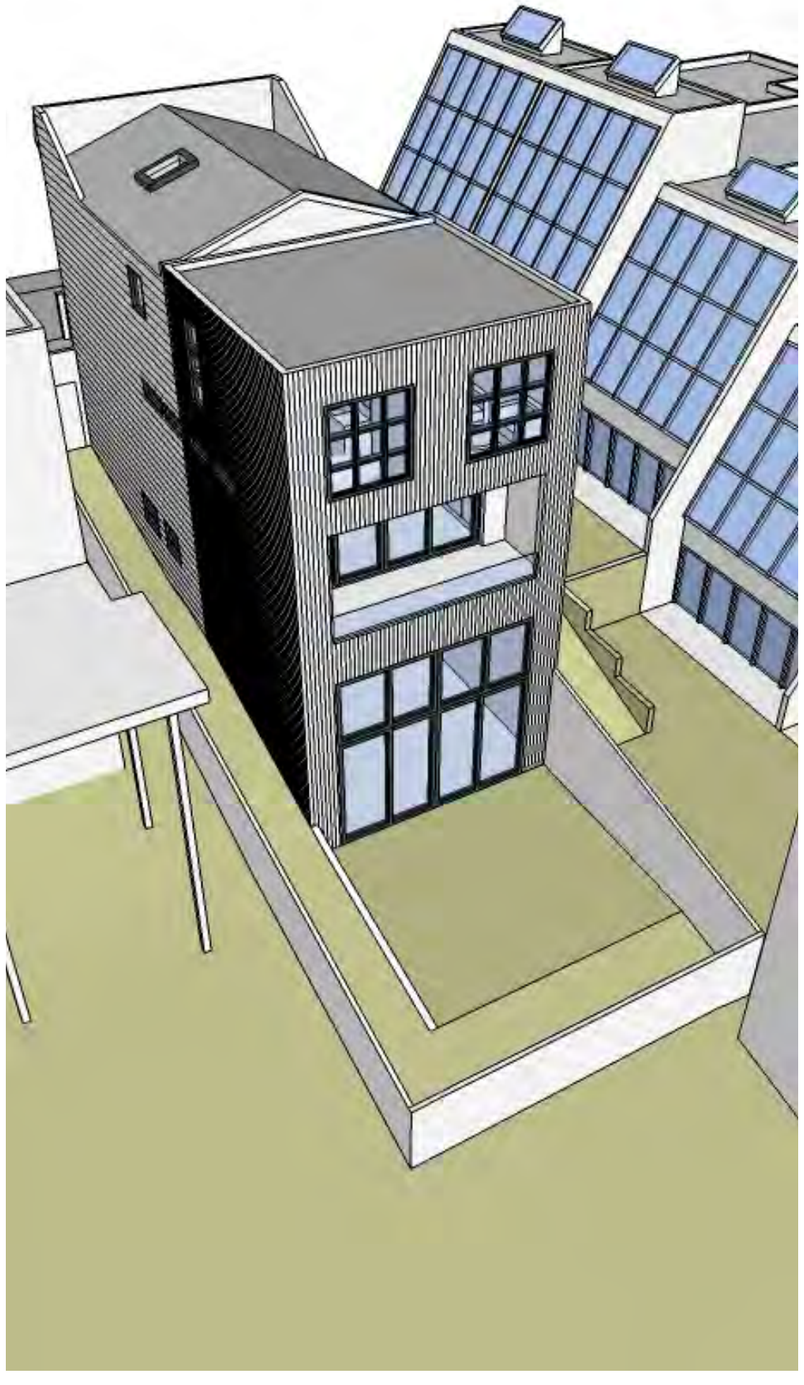
| Unit: | Unit 1 | Unit 2 | Unit 3 | Unit 4 | Unit 5 |
|---|---|---|---|---|---|
| $/yr cost increase: | $2.93 | $9.78 | $24.20 | $36.83 | $38.17 |

F

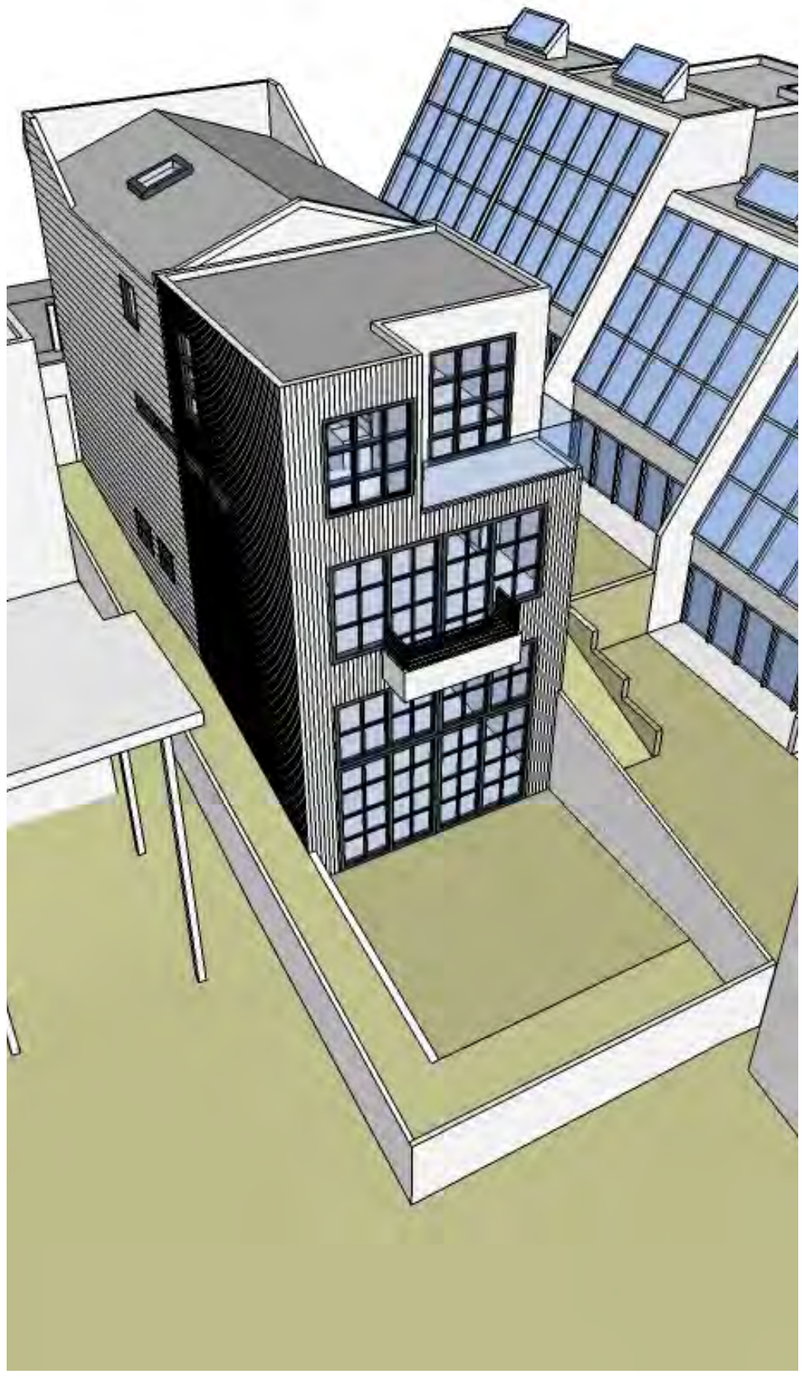
Existing



Proposed



5’ Setback



1040 Broderick Sunlight Analysis

Existing | Proposed | 5’ Setback

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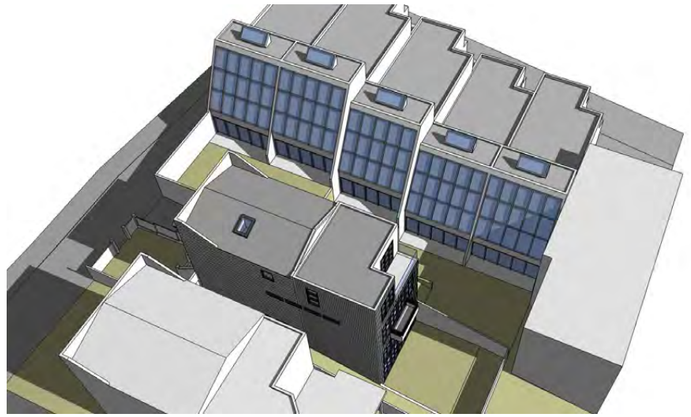

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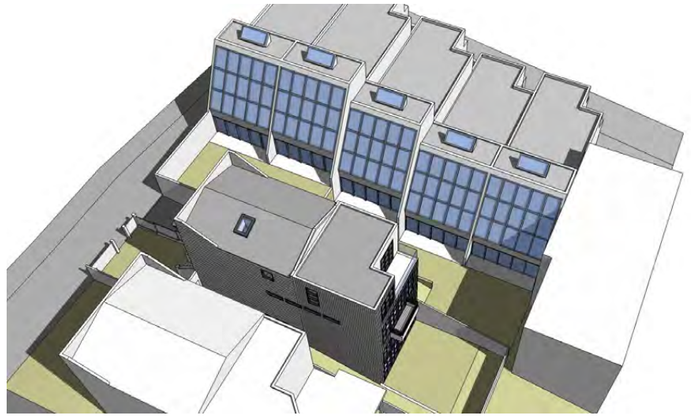

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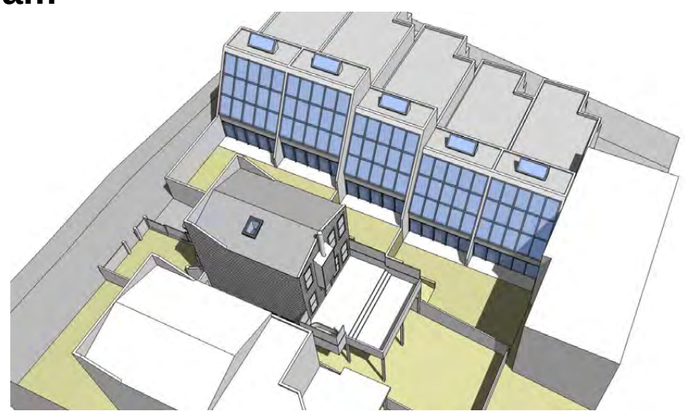
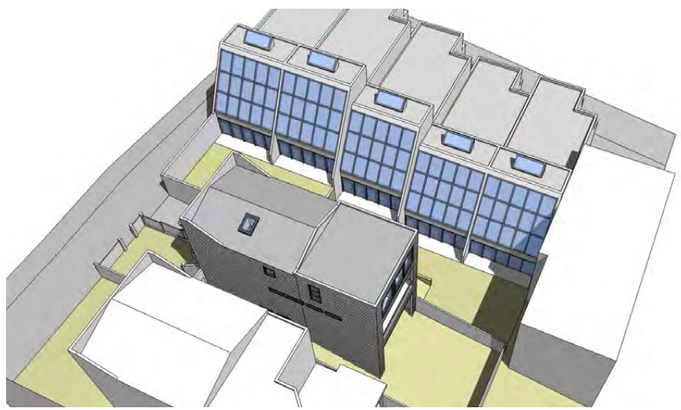
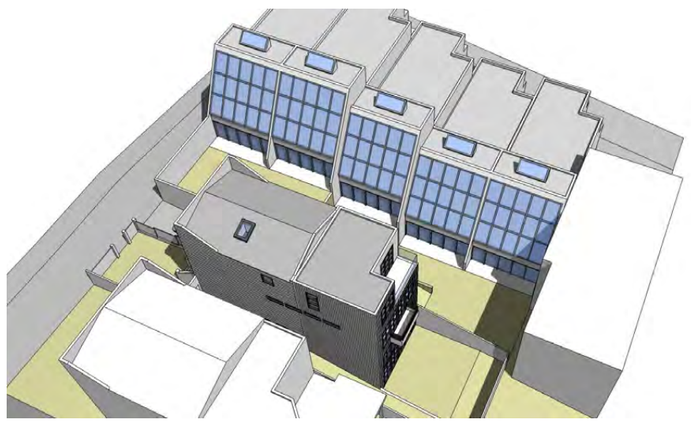




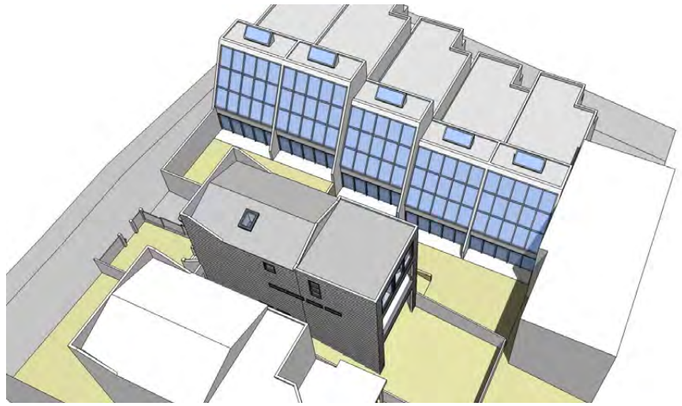


**21st of June** | **21st of June**

1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings**

Existing | Proposed | 5’ Setback

**11am**



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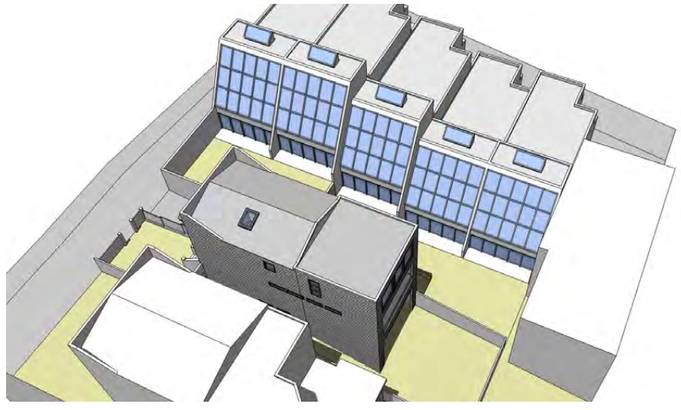

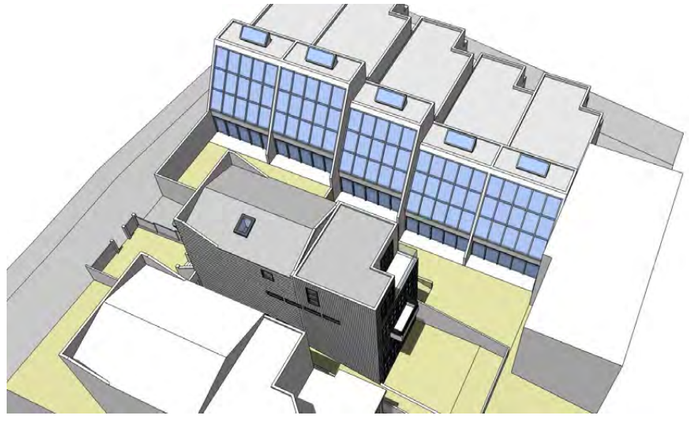

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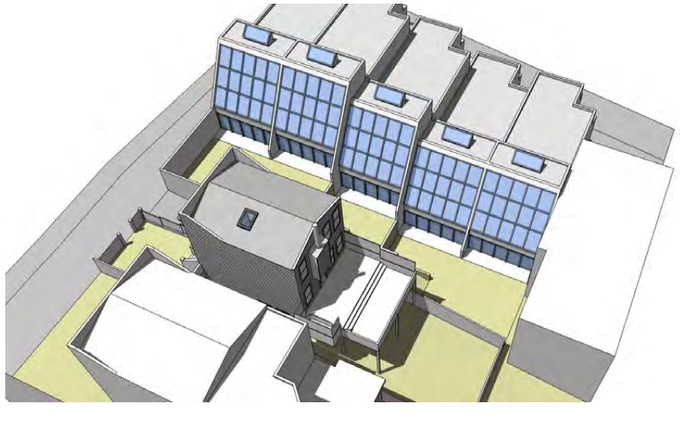
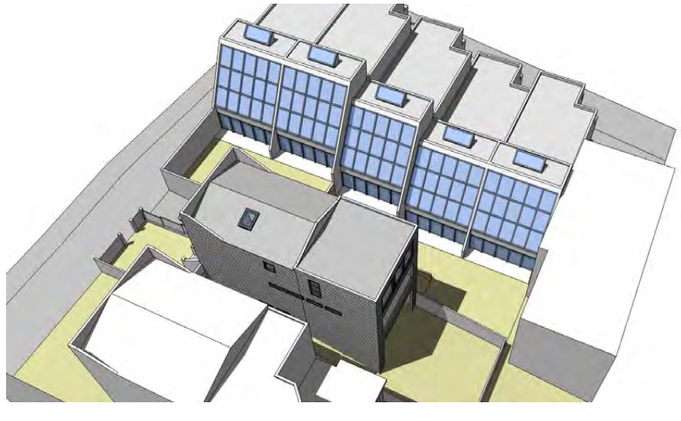
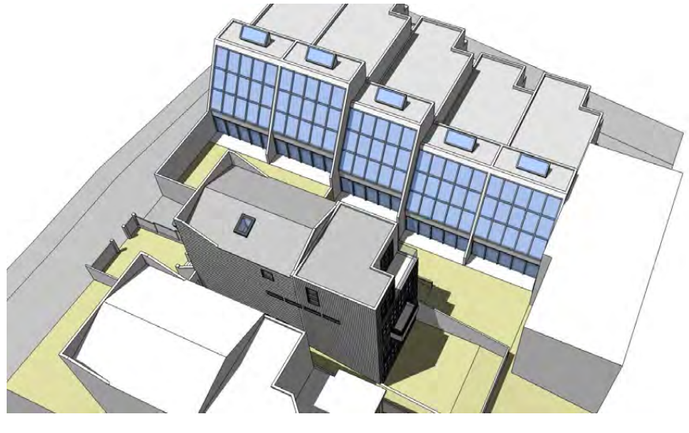






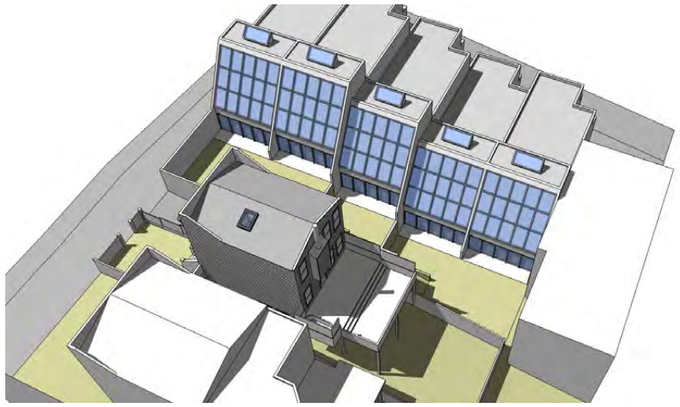
**21st of June**

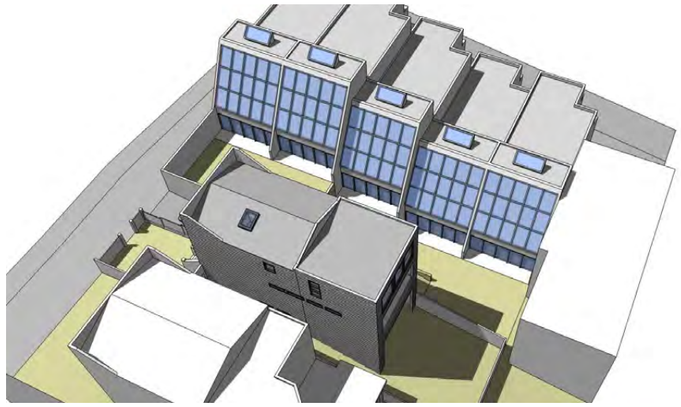
**21st of June**

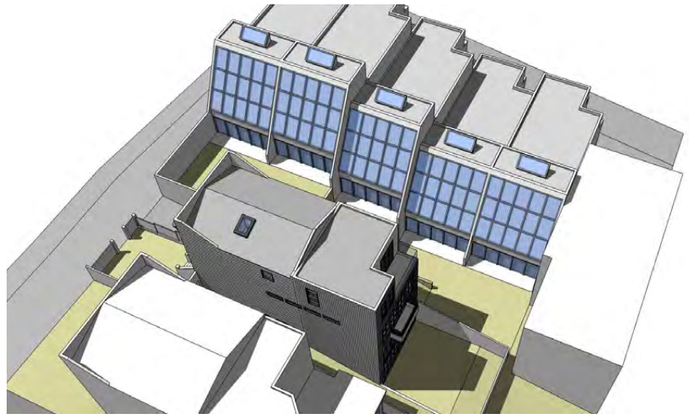
1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings**

Existing | Proposed | 5’ Setback

**2pm**







**3pm**

**4pm**

**21st of June**

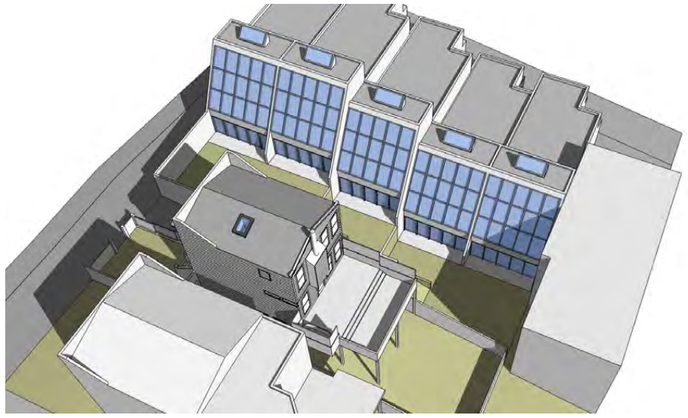
**21st of June**

1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings**

Existing | Proposed | 5’ Setback

**8am**

**9am**



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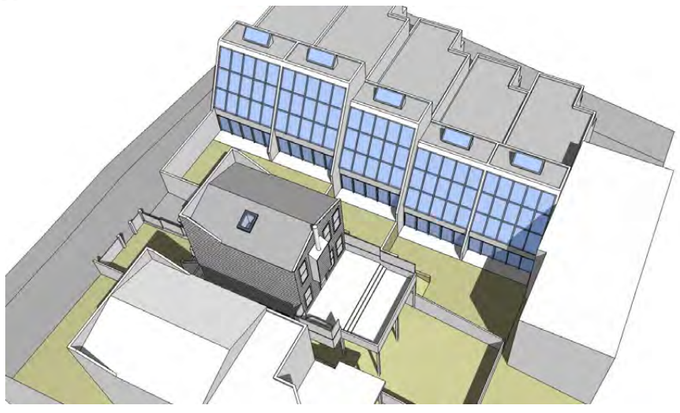
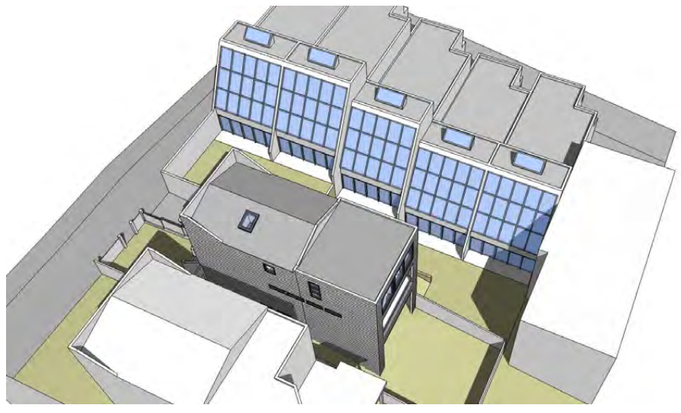
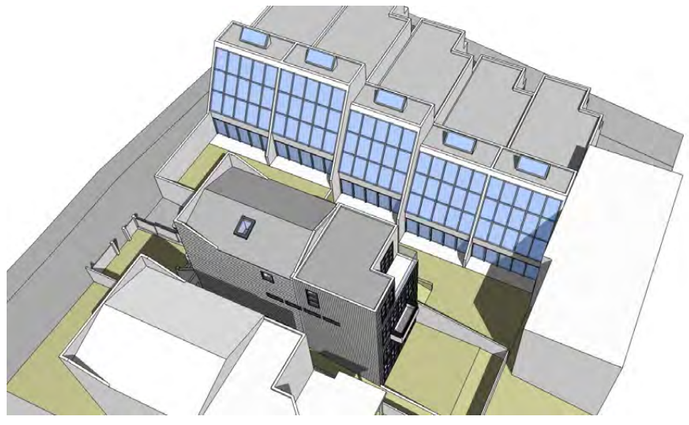


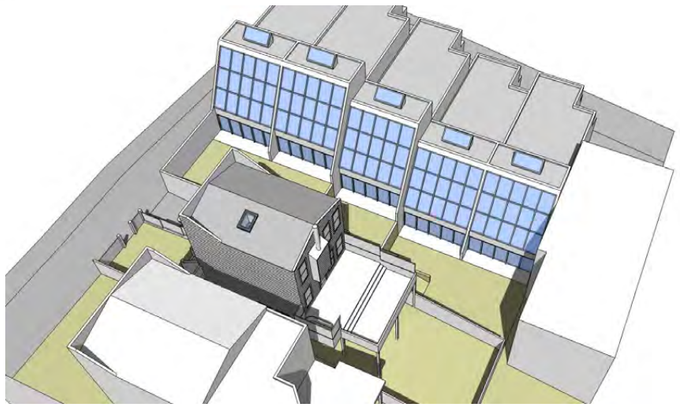
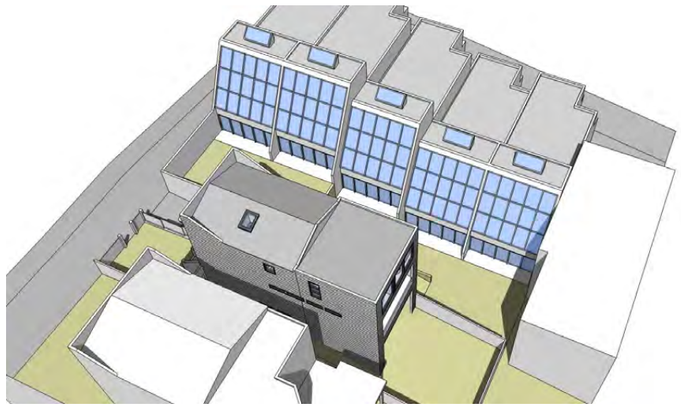
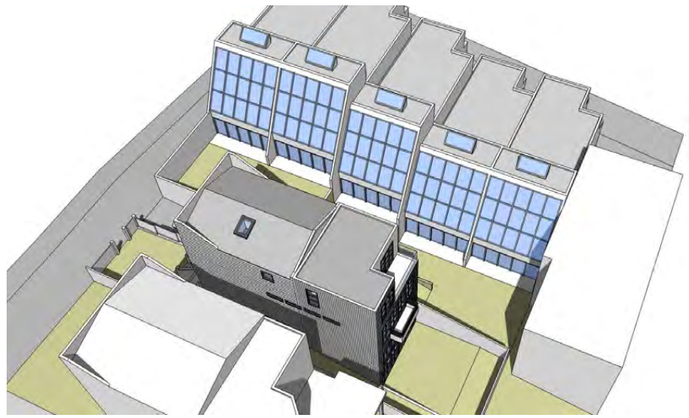
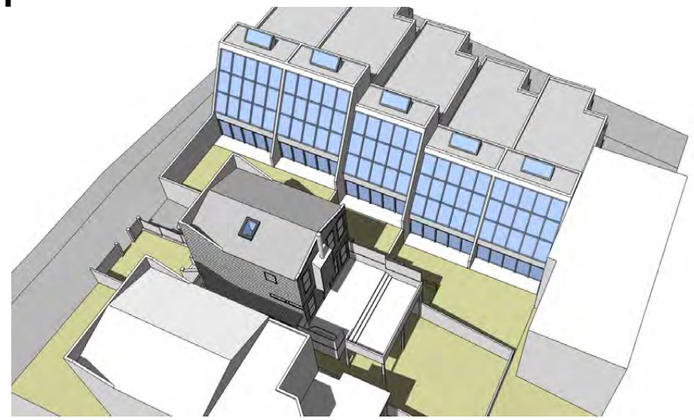
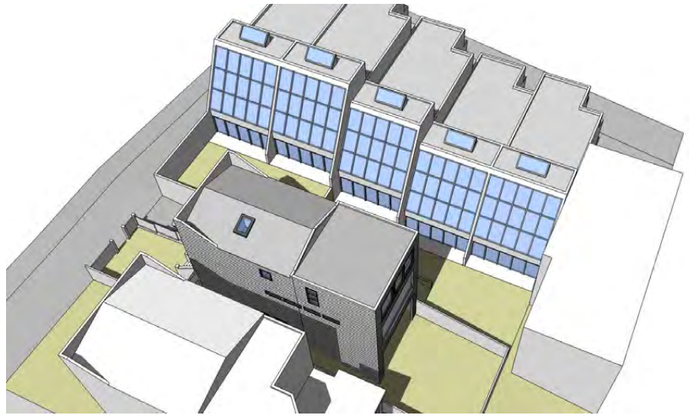
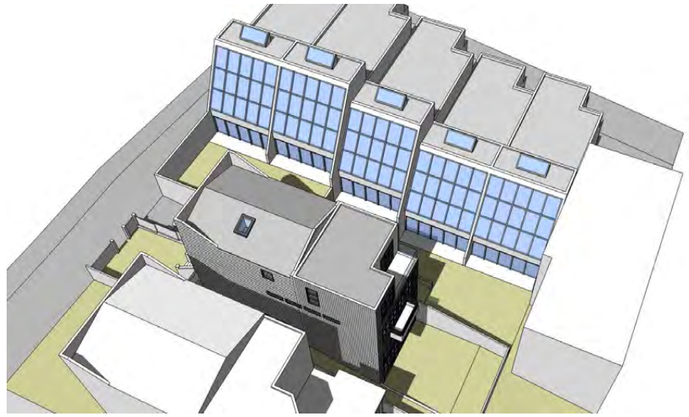
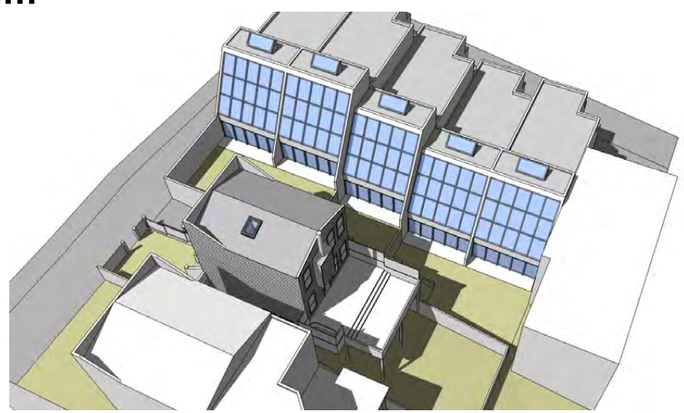
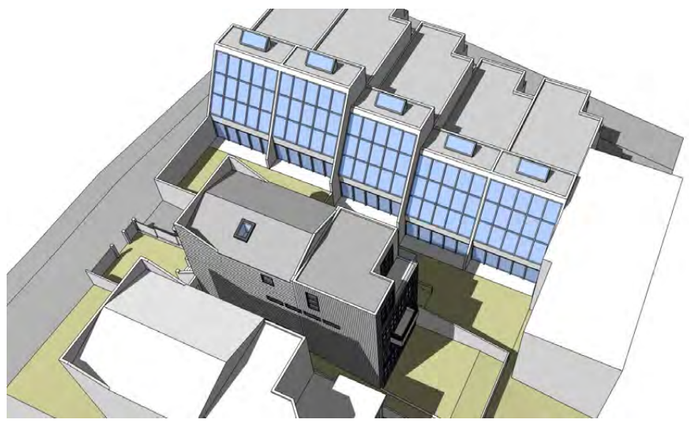




**10th of April / 1st of September**

**7th of April / 4th of September**

1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings (last dates)**

| | Existing | Proposed | 5’ Setback |
|---|---|---|---|
| **11am** |  |  |  |
| **12pm** |  |  |  |
| **1pm** |  |  |  |
| | **10th of April / 1st of September** | | **7th of April / 4th of September** |

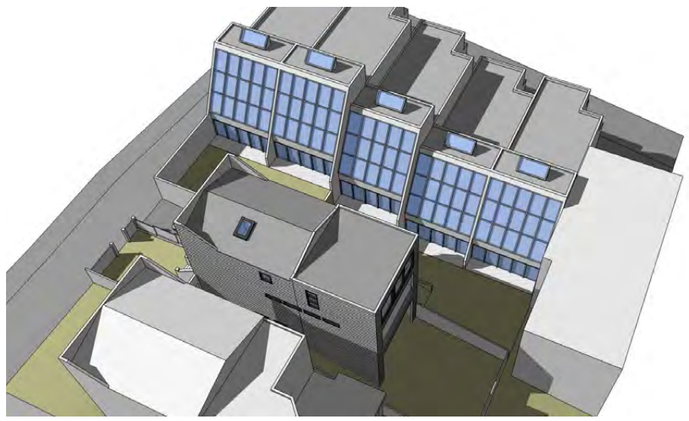
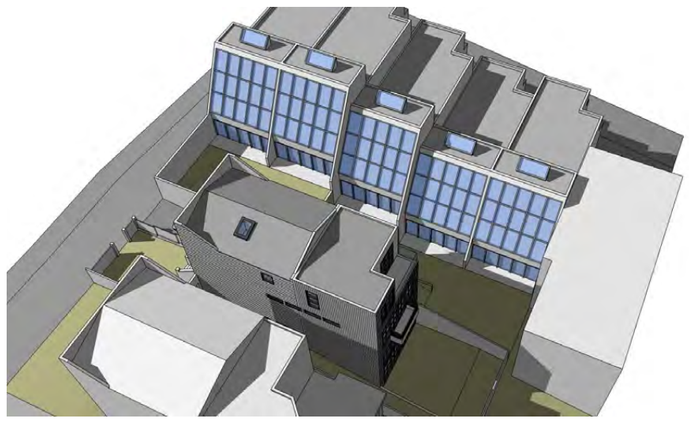
1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings (last dates)**

Existing | Proposed | 5’ Setback

**2pm**



**3pm**

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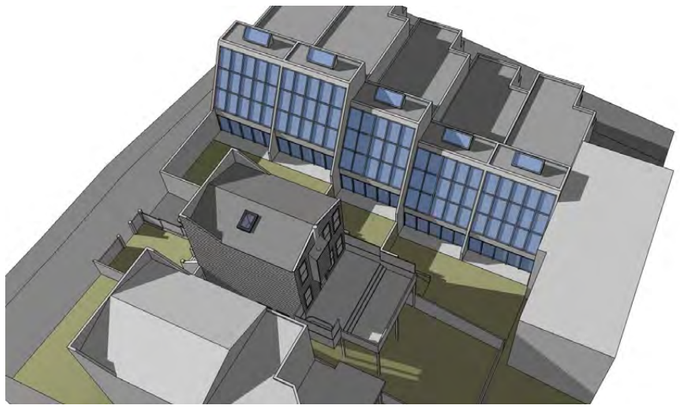
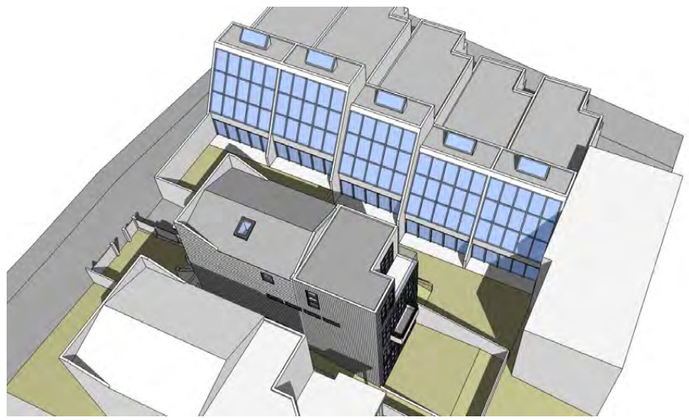


**10th of April / 1st of September**

**7th of April / 4th of September**

1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings (last dates)**

| | Existing | Proposed | 5’ Setback |
|---|---|---|---|
| **8am** |  |  |  |
| **9am** |  |  |  |
| **10am** |  |  |  |
| | | **21st of March / September** | **28th of March / 16th of September** |

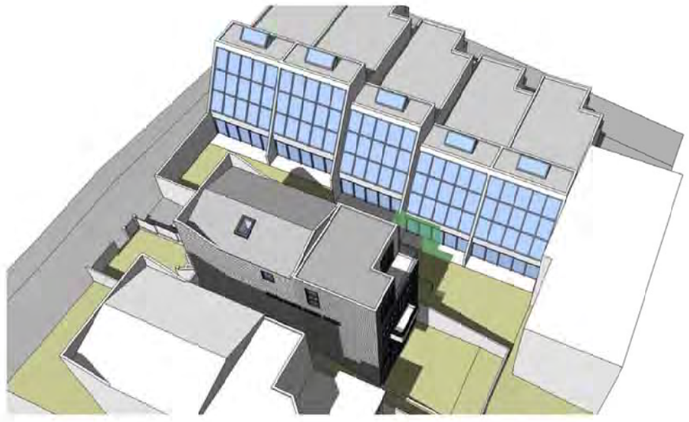
1040 Broderick Sunlight Analysis - **Start of minimum solar impact on angled glazing**

Existing | Proposed | 5’ Setback

**11am**

**12pm**

**Impact**



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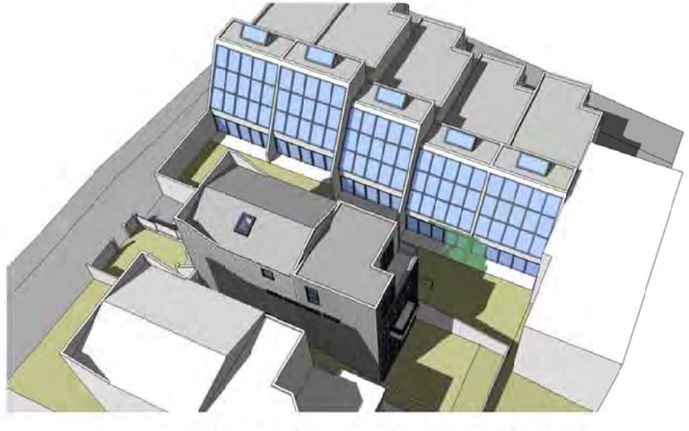


**21st of March / September**

**28th of March / 16th of September**

1040 Broderick Sunlight Analysis - **Start of minimum solar impact on angled glazing**

Existing

Proposed

5’ Setback

**2pm**

**Impact**

**3pm**

**4pm**

**21st of March / September**

**28th of March / 16th of September**

1040 Broderick Sunlight Analysis - **Start of minimum solar impact on angled glazing**

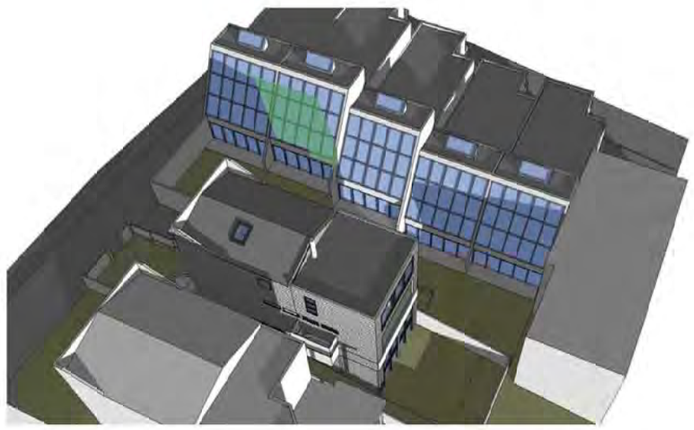
Existing

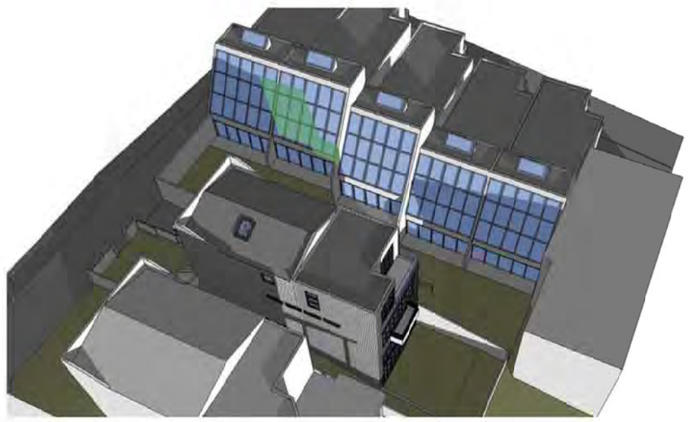
Proposed

5’ Setback

**8am**

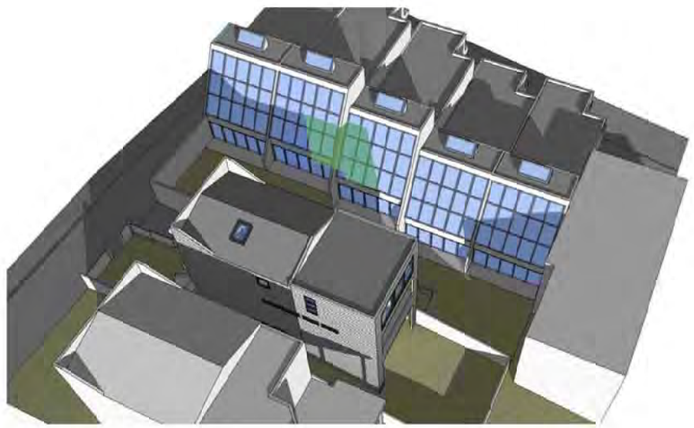
**Impact**

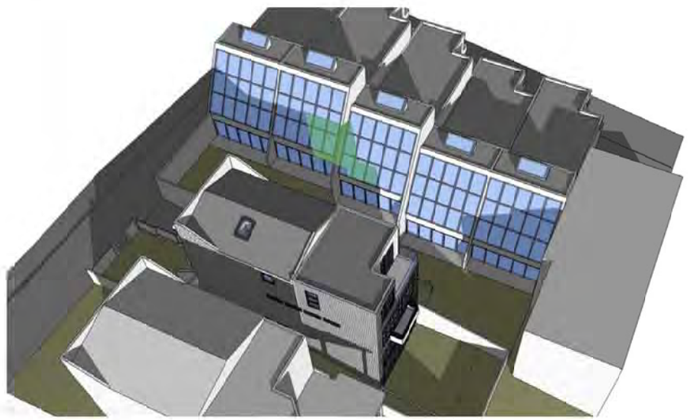




**9am**

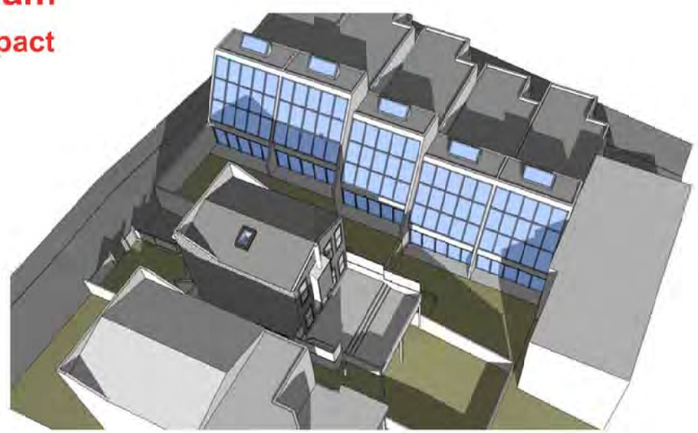
**Impact**

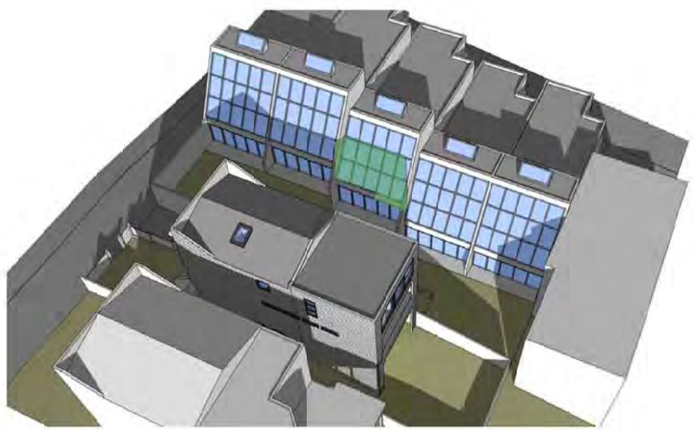




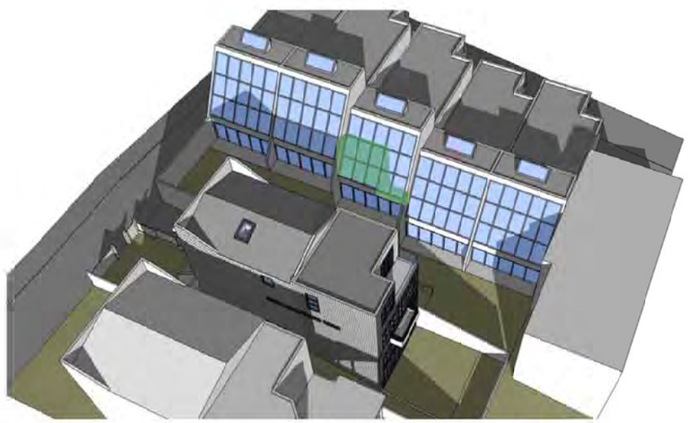
**10am**

**Impact**



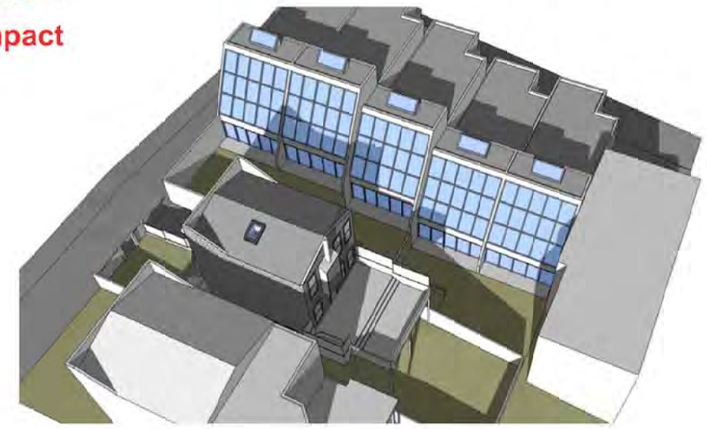
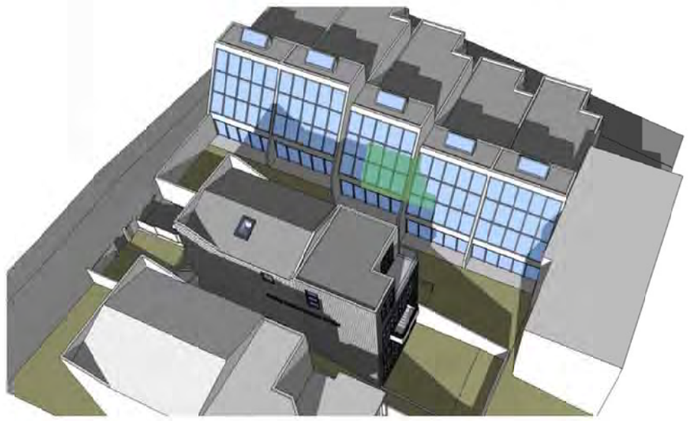
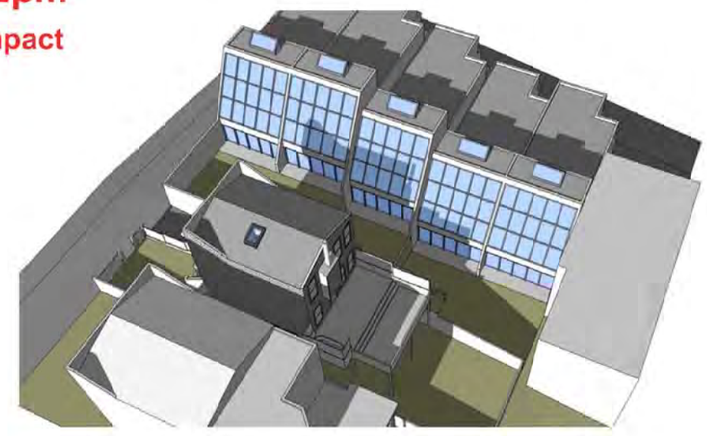
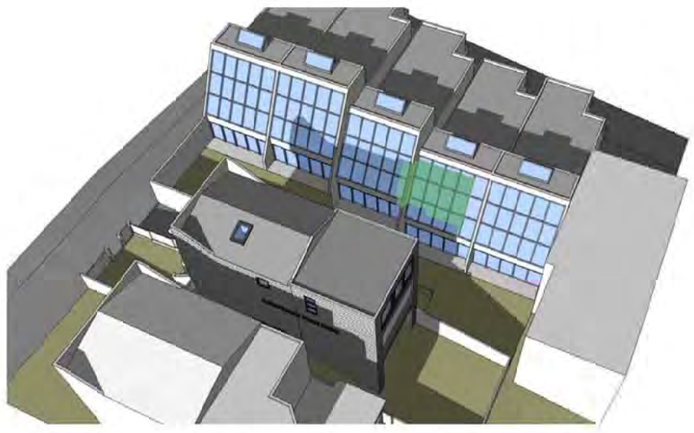


**21st of December**



**21st of December**

1040 Broderick Sunlight Analysis - **Date of maximum solar impact on adjacent buildings**

| | Existing | Proposed | 5’ Setback |
|---|---|---|---|
| **11am** Impact |  |  |  |
| **12pm** Impact |  |  |  |
| **1pm** Impact |  |  |  |
| | | **21st of December** | **21st of December** |

1040 Broderick Sunlight Analysis - **Date of maximum solar impact on adjacent buildings**

Existing

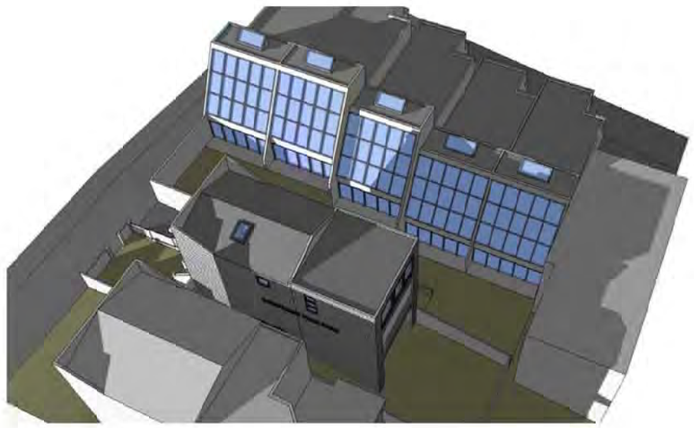
Proposed

5’ Setback

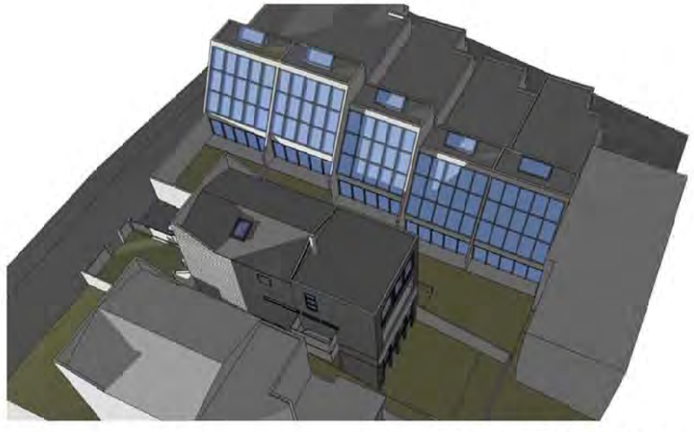
**2pm**

**Impact**

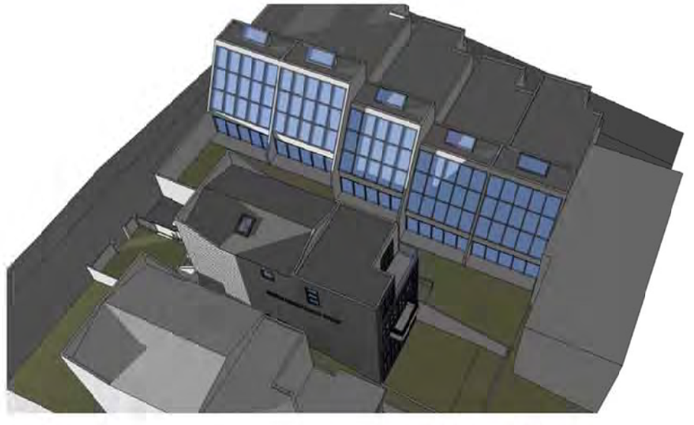
**3pm**



**4pm**



**21st of December**

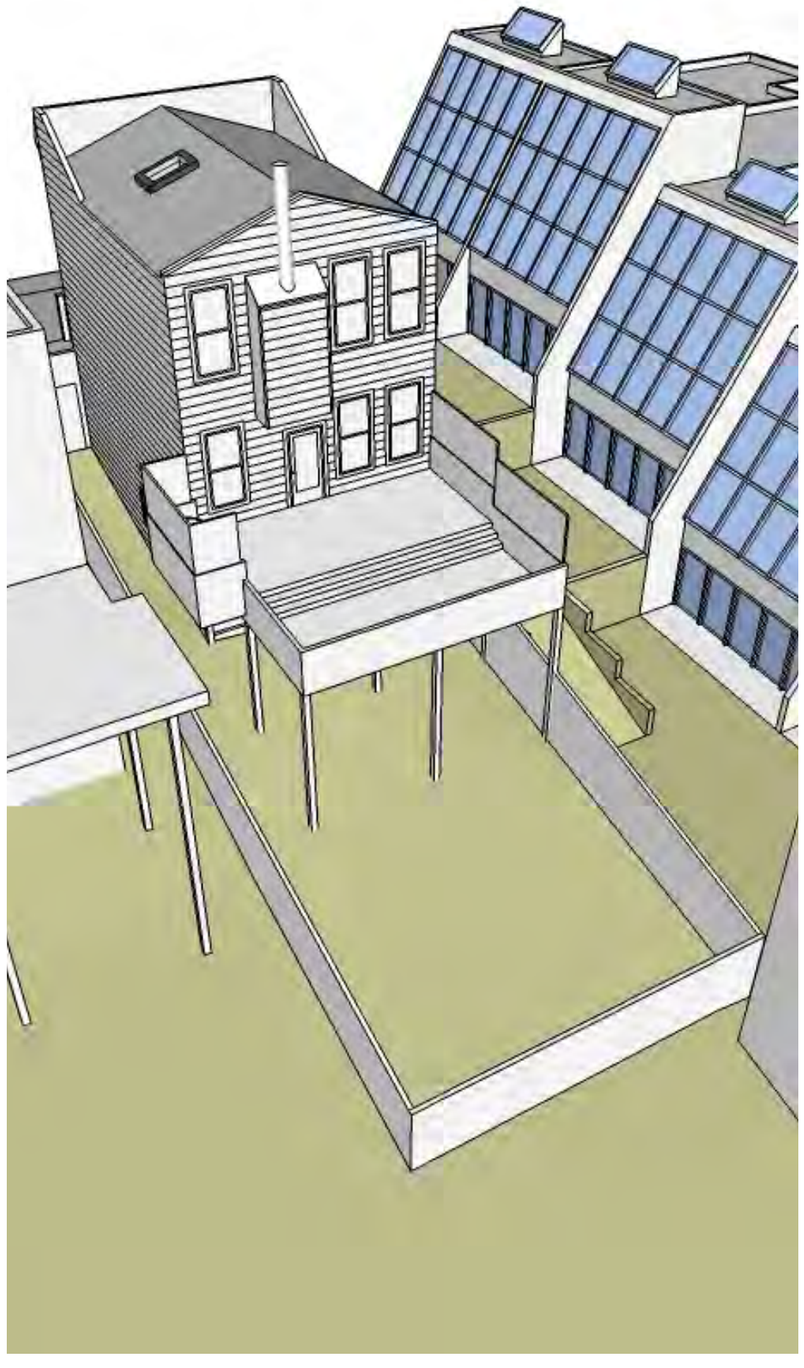


**21st of December**

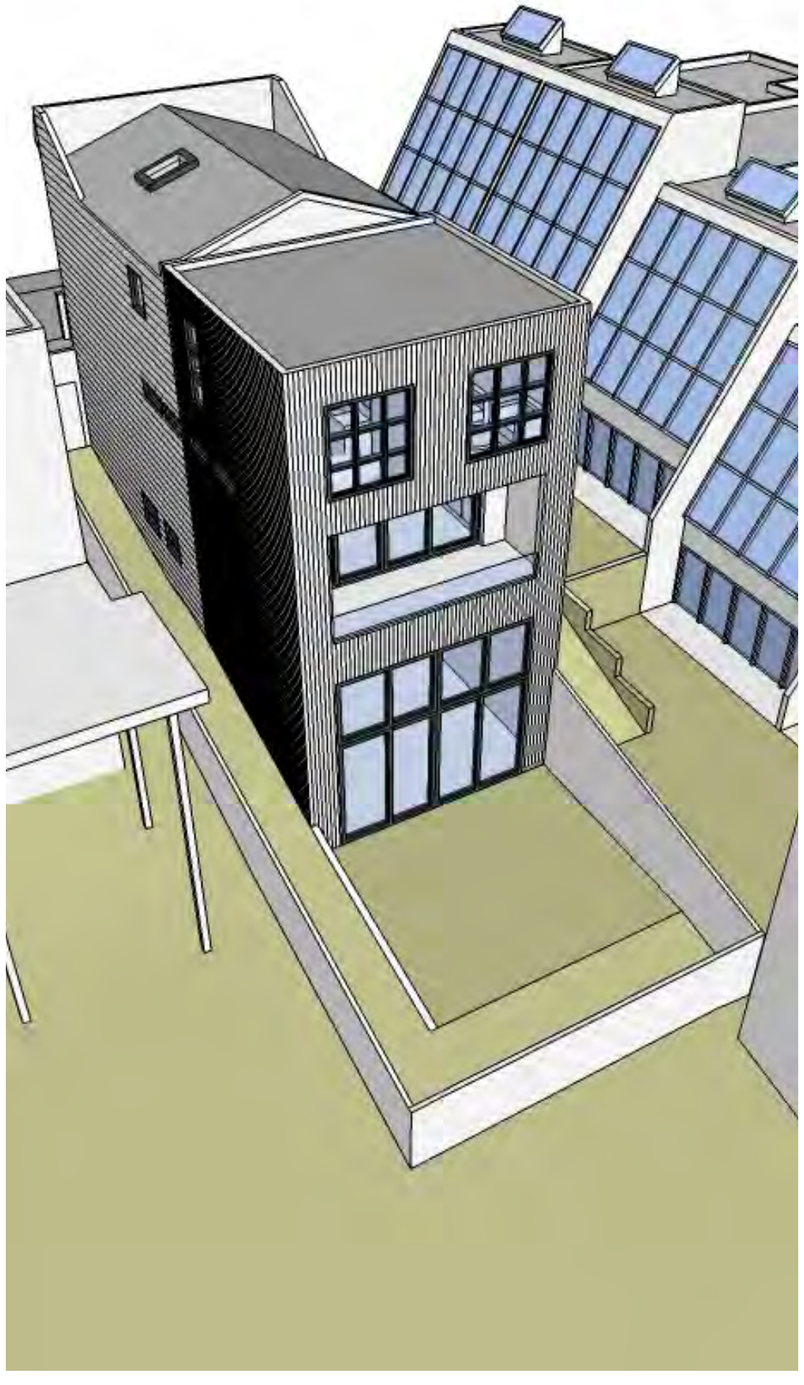
1040 Broderick Sunlight Analysis - **Date of maximum solar impact on adjacent buildings**

G

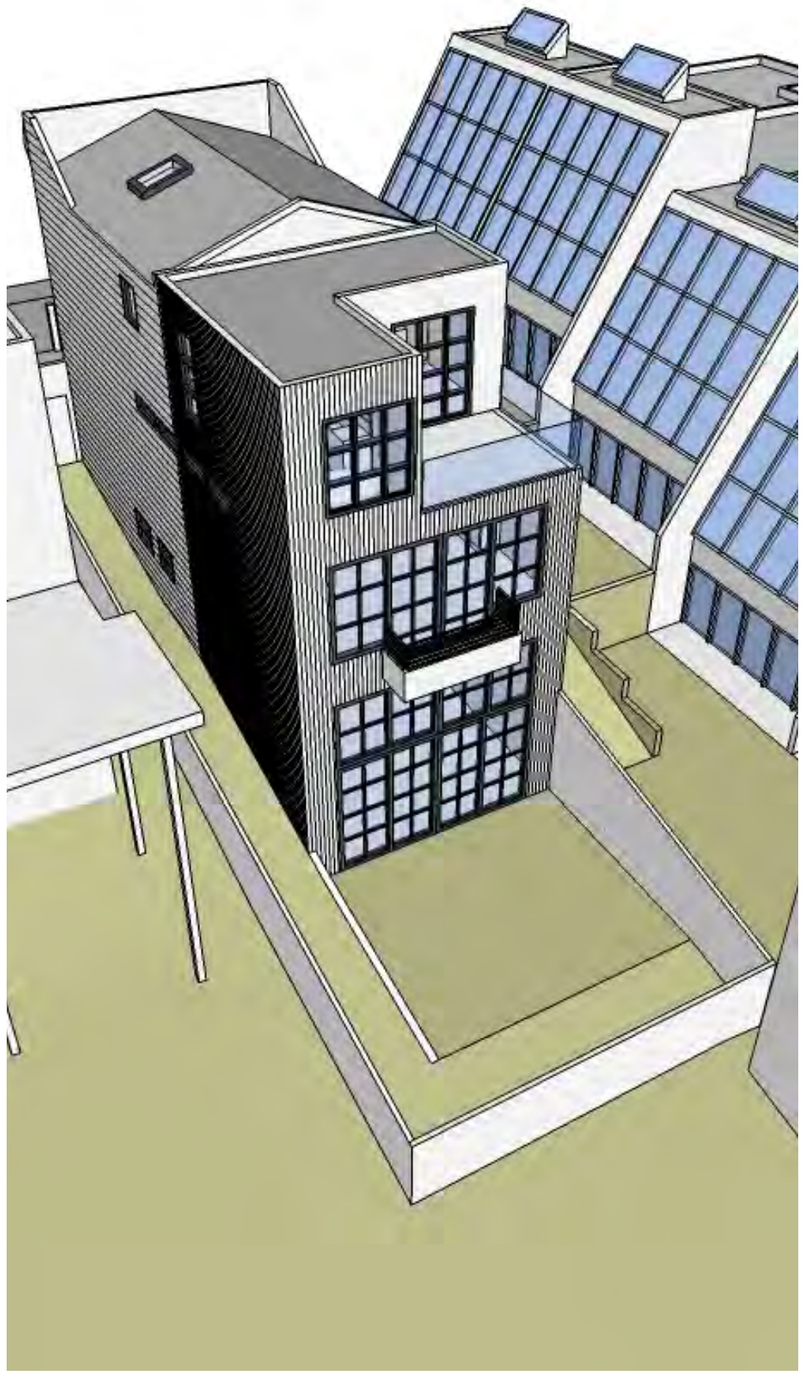
Existing



Proposed



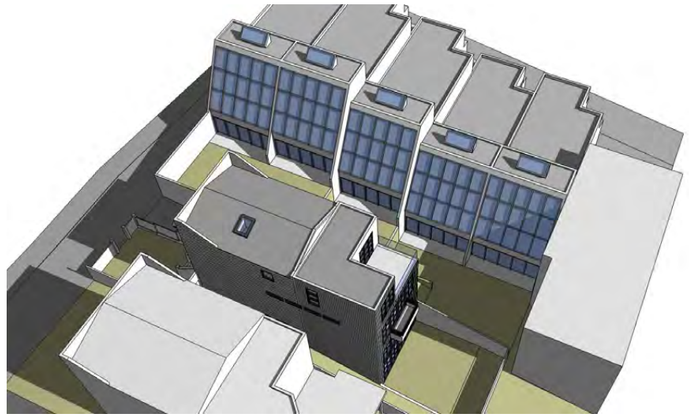
10’ Setback



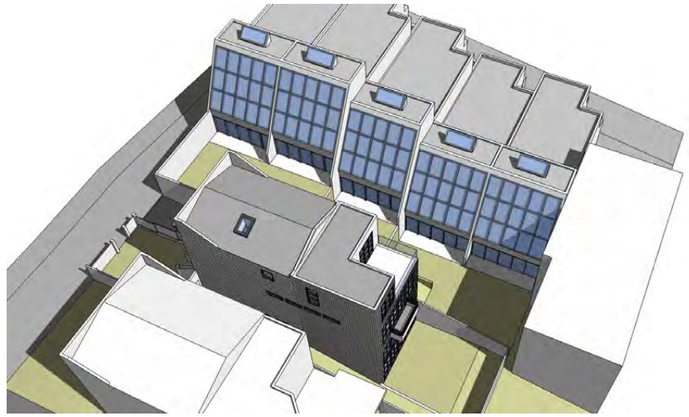
1040 Broderick Sunlight Analysis

Existing | Proposed | 10’ Setback

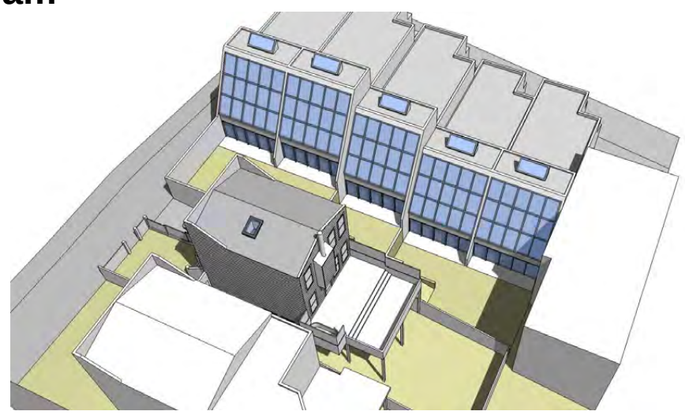
**8am**

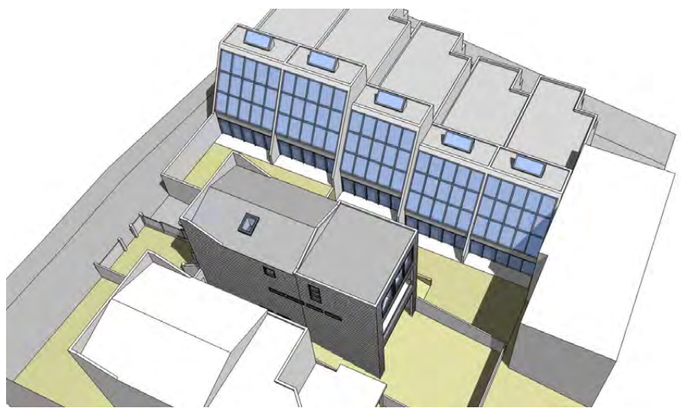


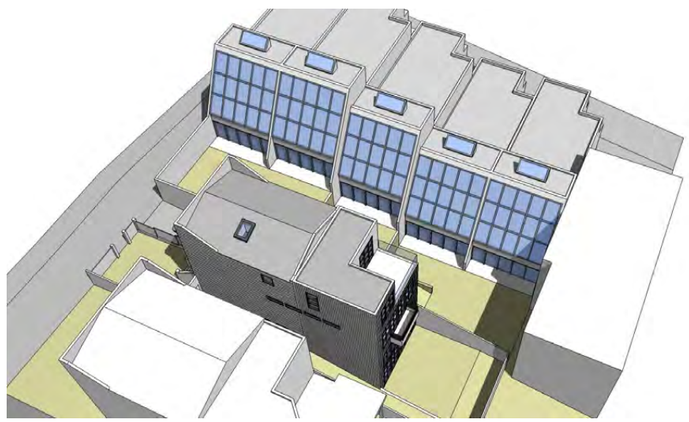
**9am**



**10am**





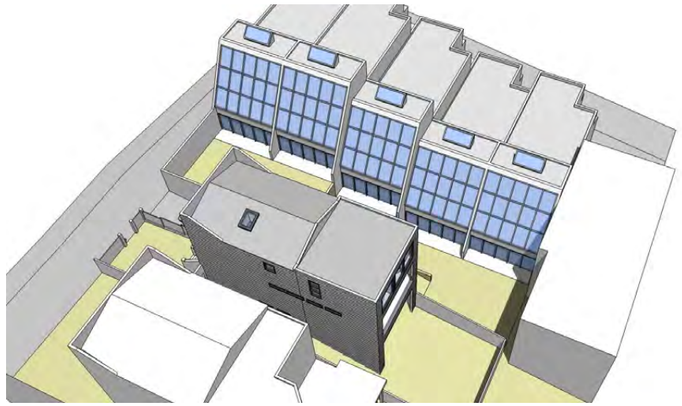


**21st of June** | **21st of June**

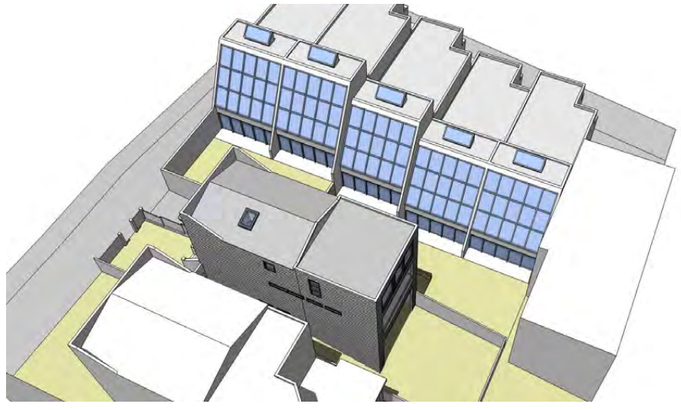
1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings**

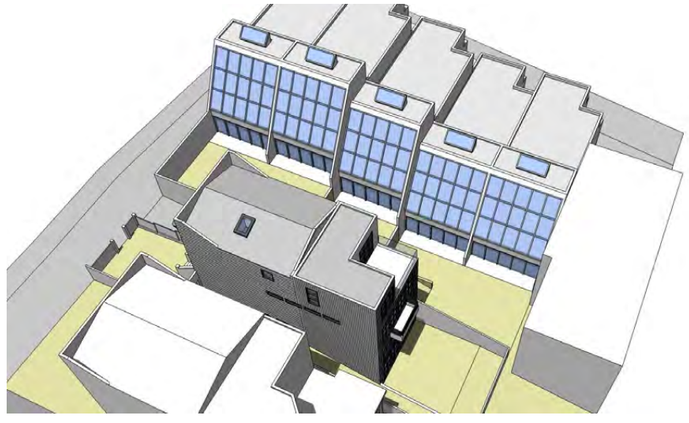
Existing | Proposed | 10’ Setback

**11am**

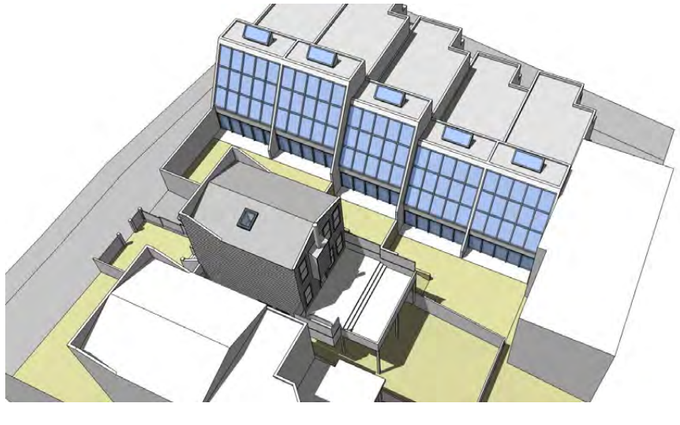


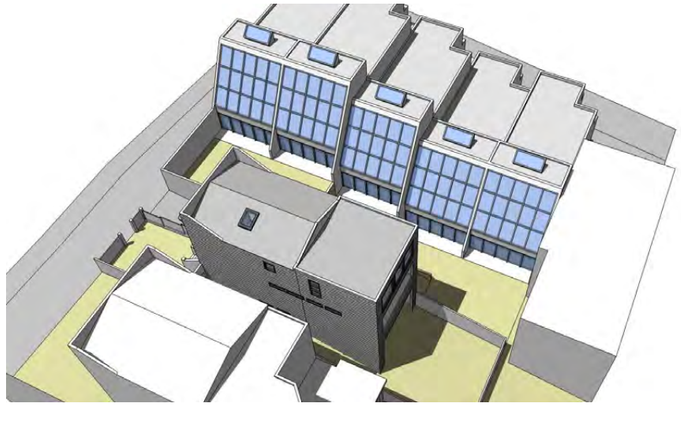
**12pm**

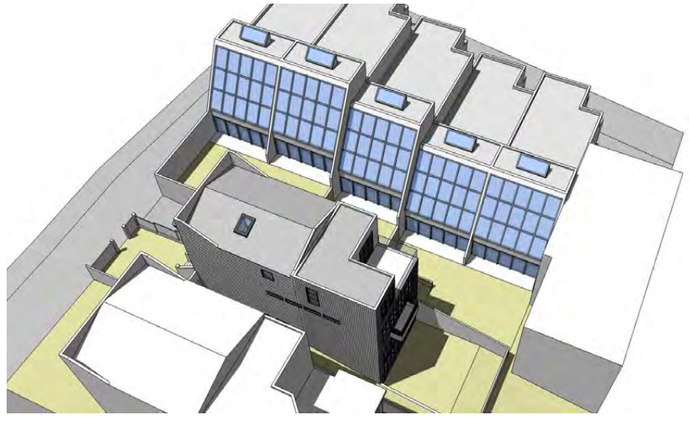




**1pm**







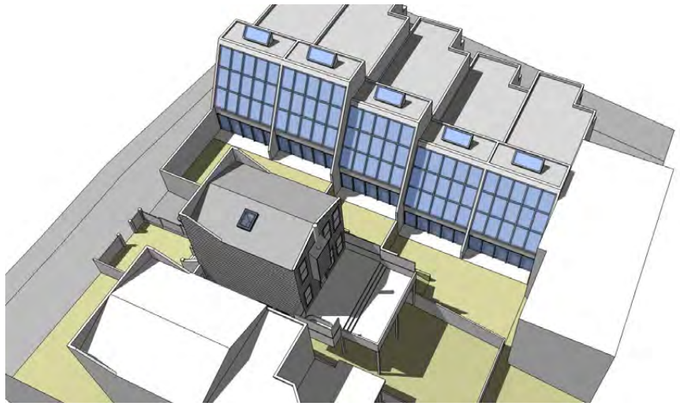
**21st of June**

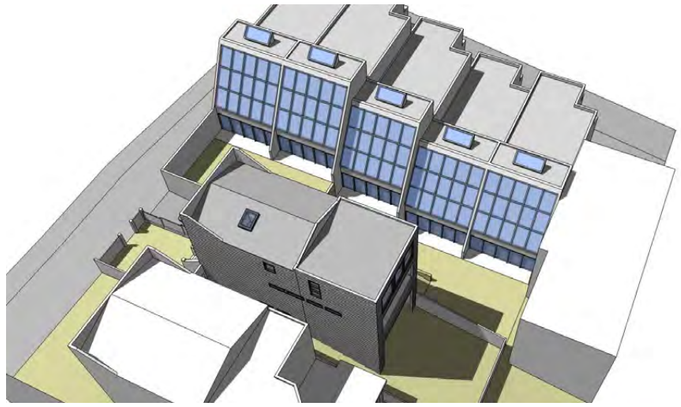
**21st of June**

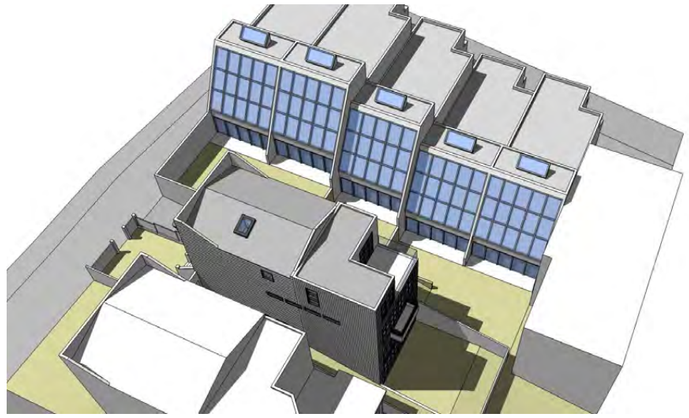
1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings**

Existing | Proposed | 10’ Setback

**2pm**







**3pm**

**4pm**

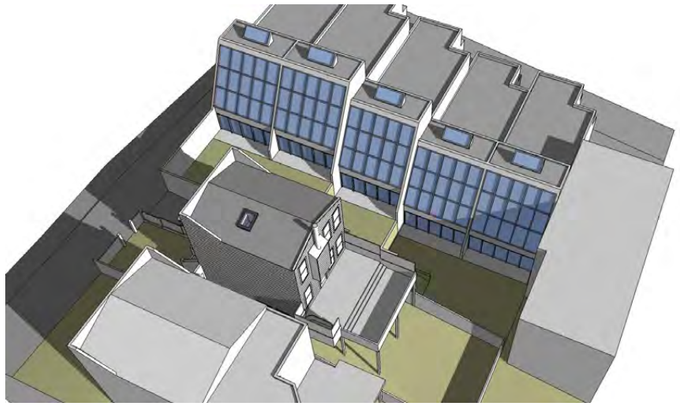
**21st of June**

**21st of June**

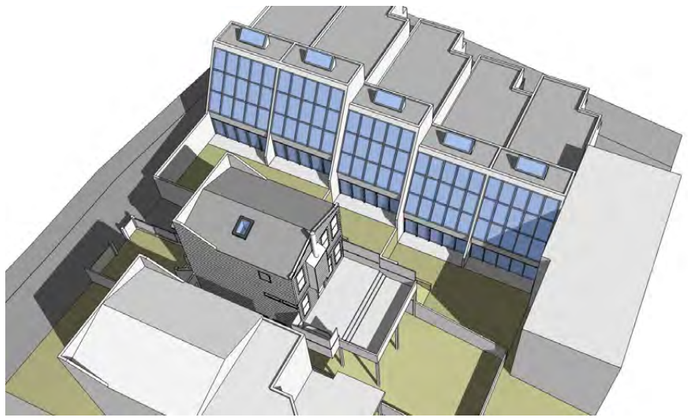
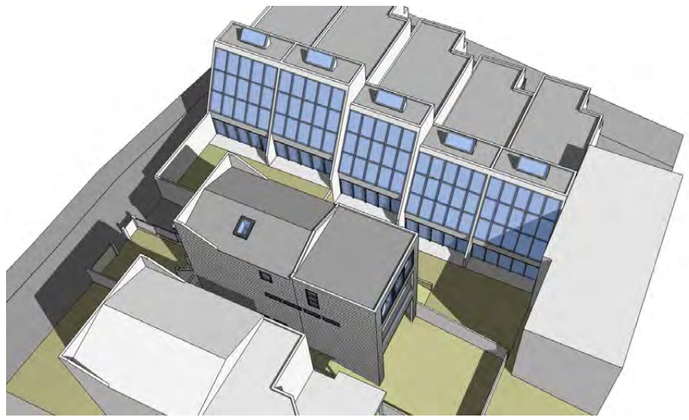
1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings**

Existing | Proposed | 10’ Setback

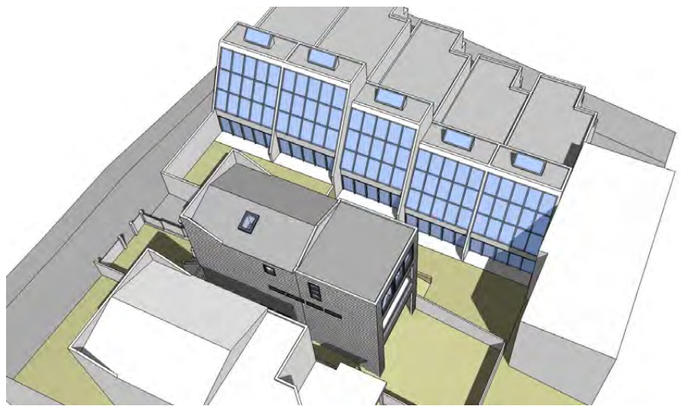
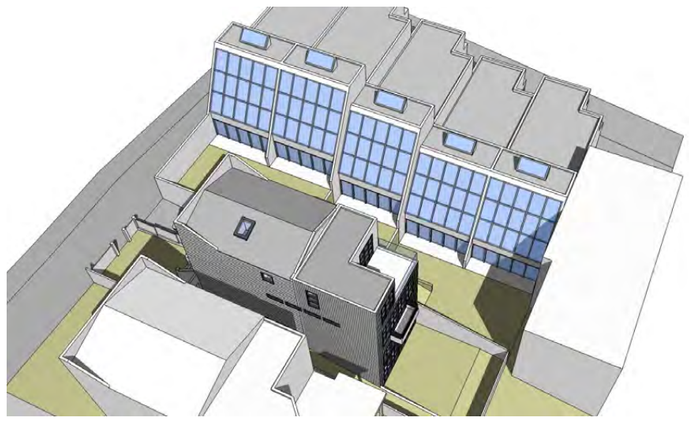
**8am**



**9am**

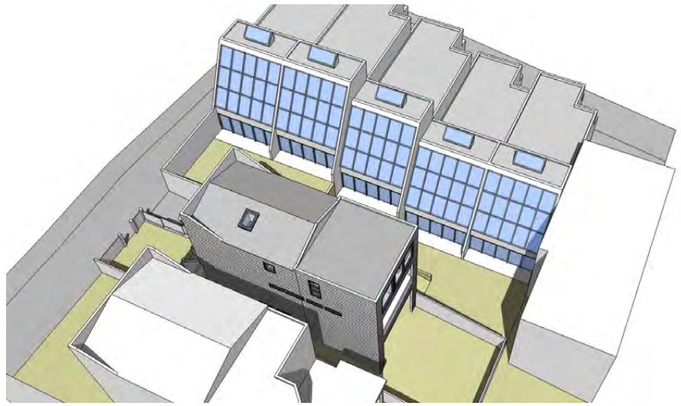
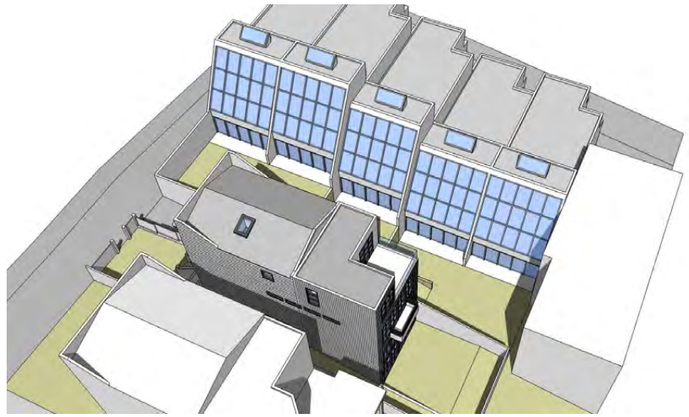
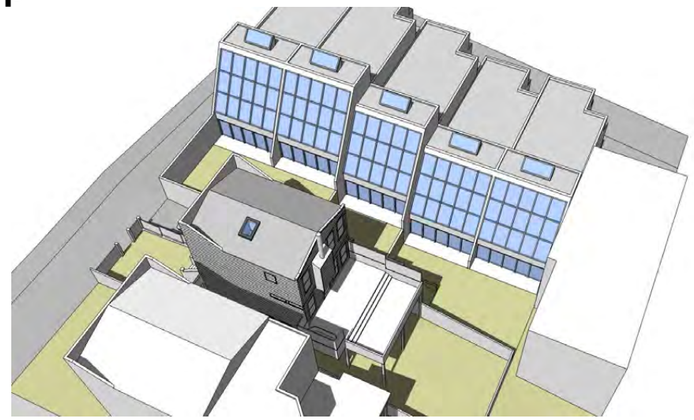
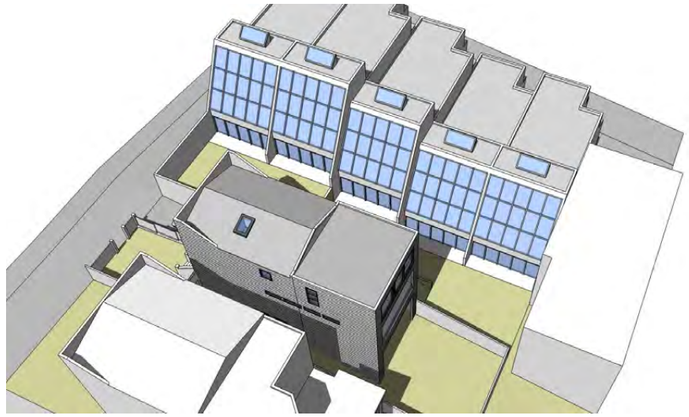
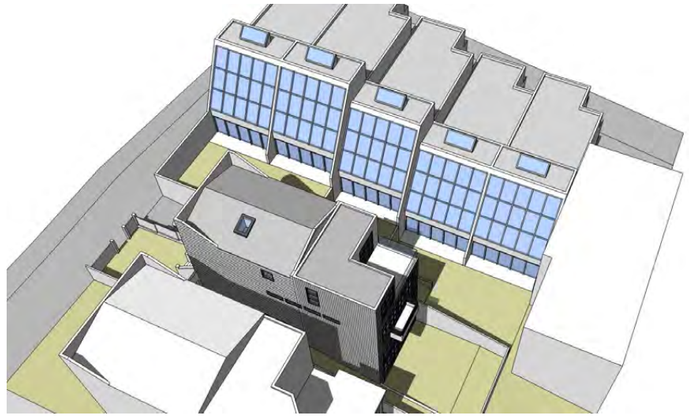
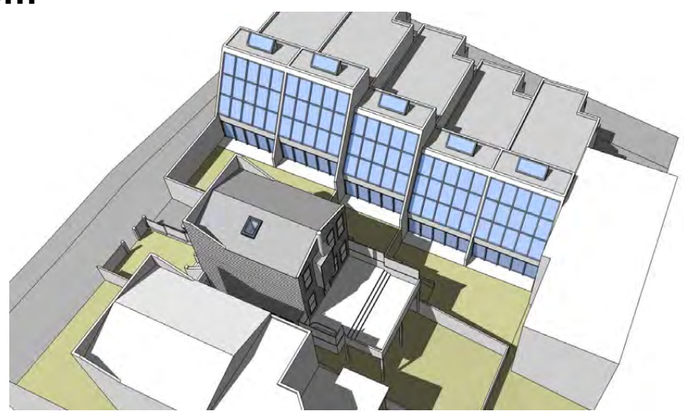
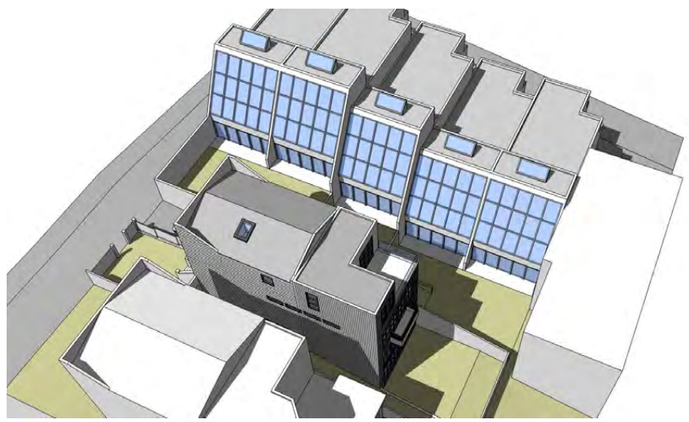

**10am**

**10th of April / 1st of September**

**7th of April / 4th of September**

1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings (last dates)**

| | Existing | Proposed | 10’ Setback |
|---|---|---|---|
| **11am** |  |  |  |
| **12pm** |  |  |  |
| **1pm** |  |  |  |
| | **10th of April / 1st of September** | | **7th of April / 4th of September** |

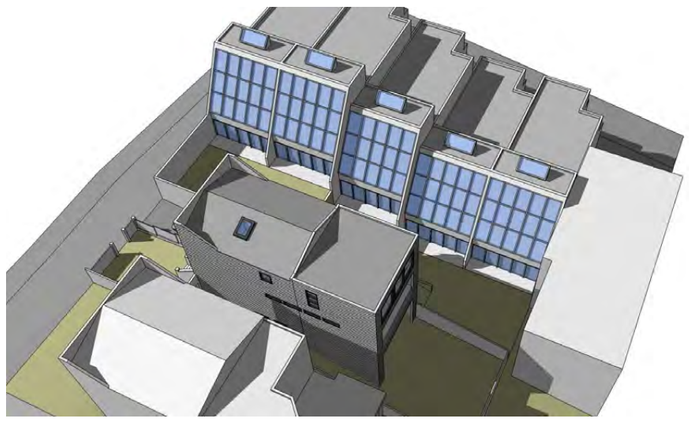
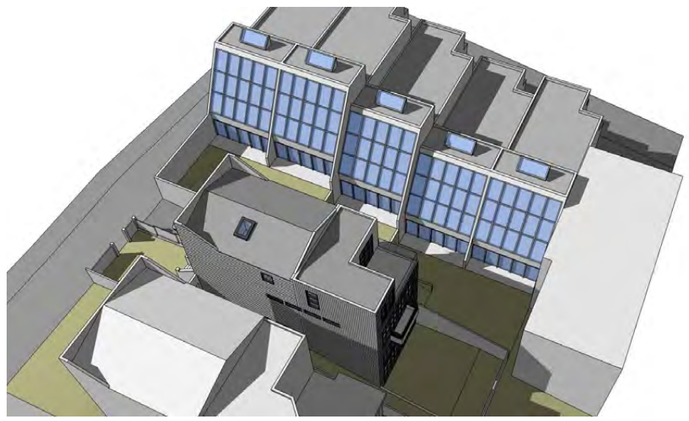
1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings (last dates)**

Existing | Proposed | 10’ Setback

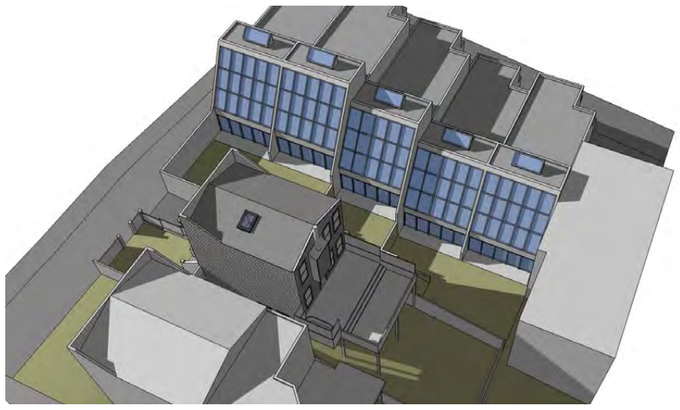
**2pm**



**3pm**

**4pm**



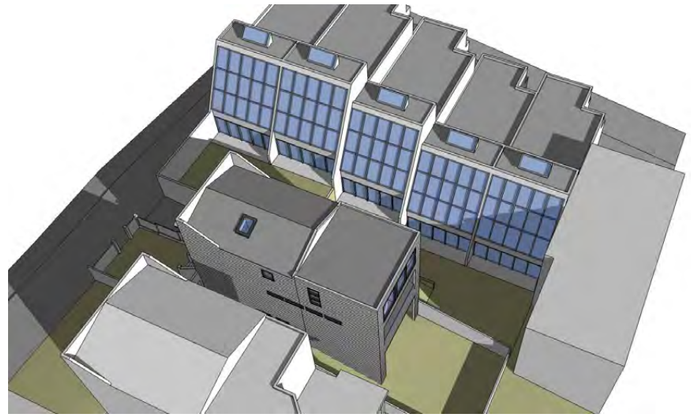
**10th of April / 1st of September**

**7th of April / 4th of September**

1040 Broderick Sunlight Analysis - **No solar impact on adjacent buildings (last dates)**

Existing | Proposed | 10’ Setback

**8am**

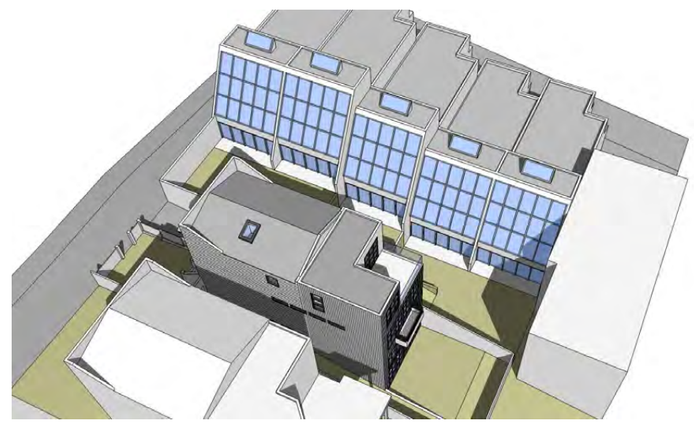




**9am**



**10am**





**21st of March / September** | **28th of March / 16th of September**

1040 Broderick Sunlight Analysis - **Start of minimum solar impact on angled glazing**

Existing | Proposed | 10’ Setback

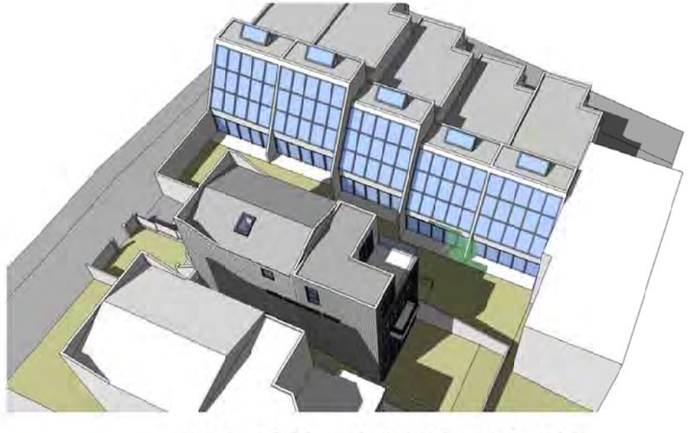
**11am**

**12pm**

**Impact**

**1pm**

**Impact**



**21st of March / September**

**28th of March / 16th of September**

1040 Broderick Sunlight Analysis - **Start of minimum solar impact on angled glazing**

Existing

Proposed

10’ Setback

**2pm**

**Impact**

**3pm**

**4pm**

**21st of March / September**

**28th of March / 16th of September**

1040 Broderick Sunlight Analysis - **Start of minimum solar impact on angled glazing**

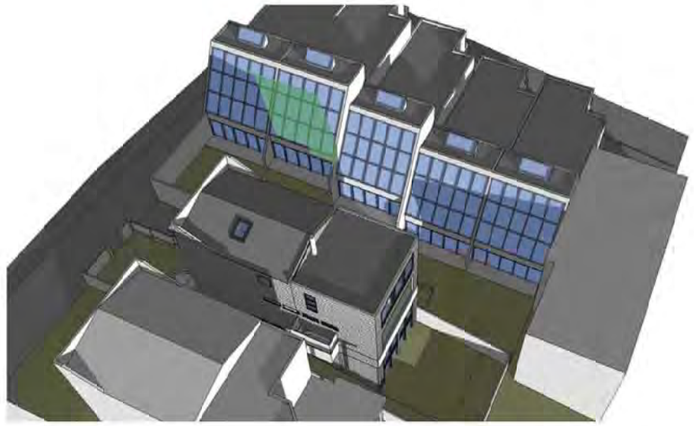
Existing

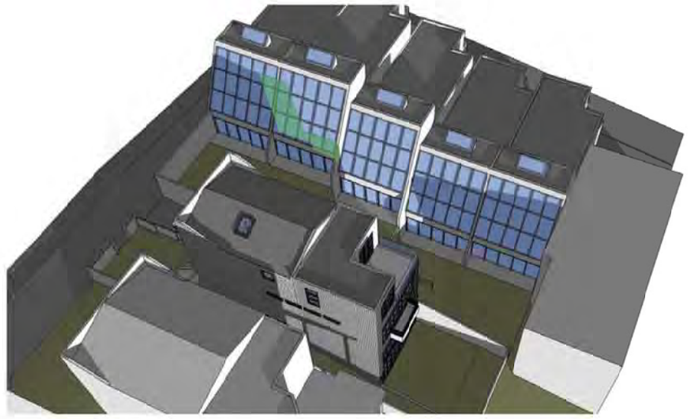
Proposed

10’ Setback

**8am**

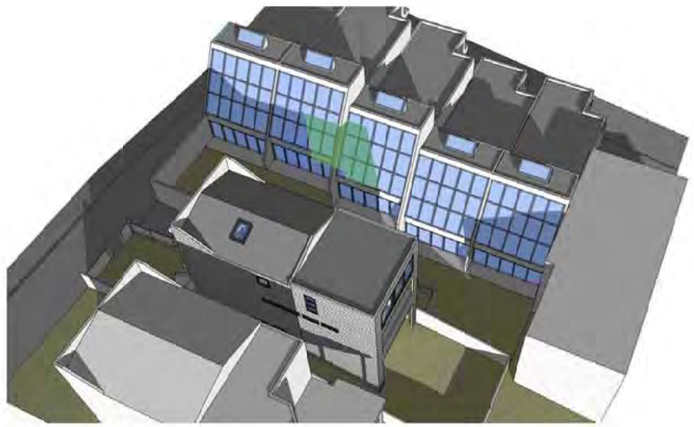
**Impact**

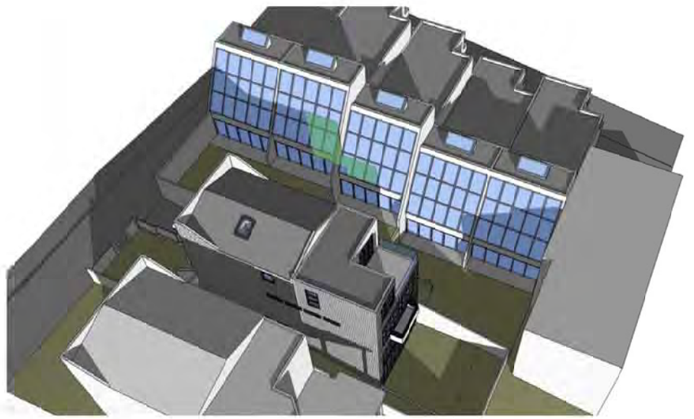




**9am**

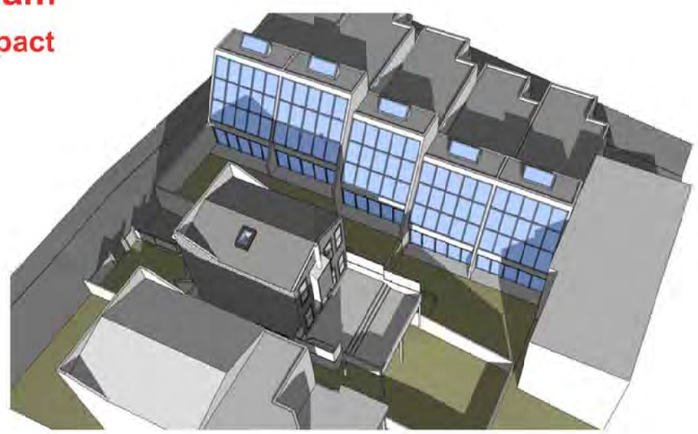
**Impact**

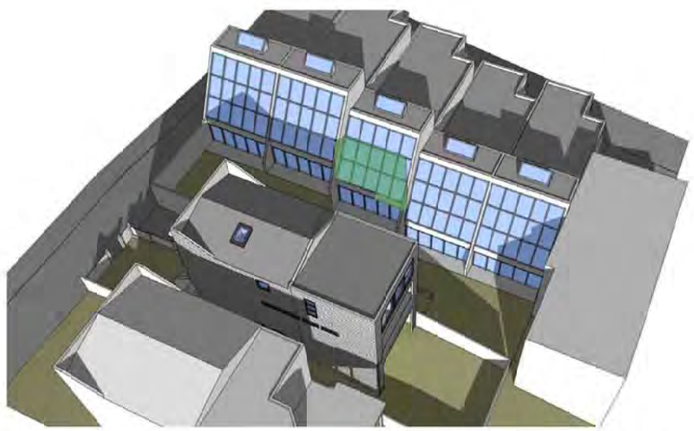




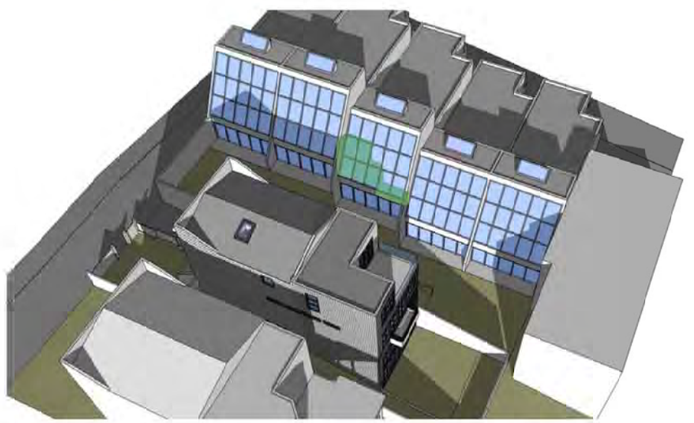
**10am**

**Impact**



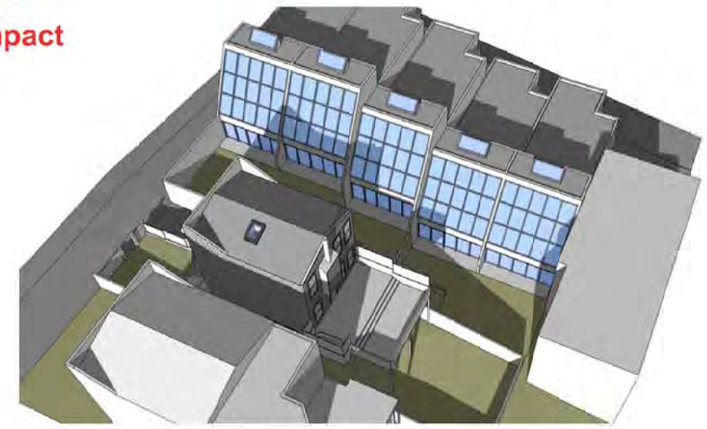
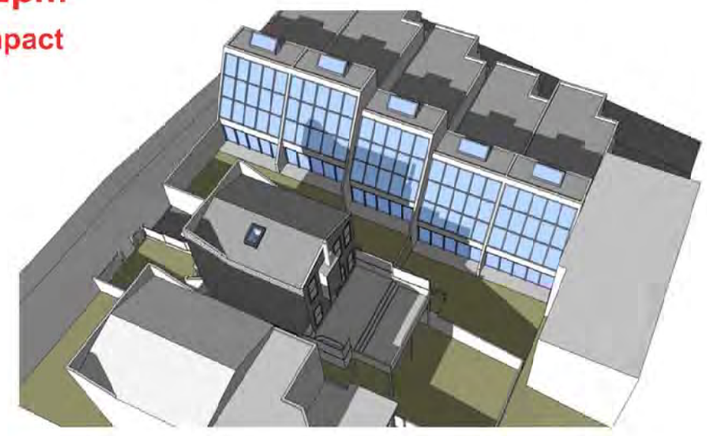
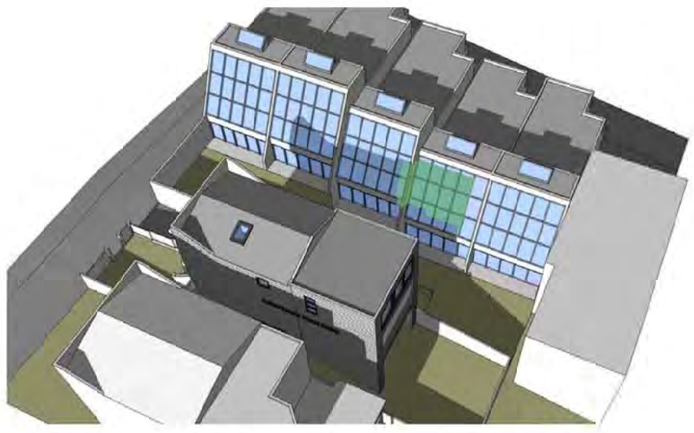


**21st of December**



**21st of December**

1040 Broderick Sunlight Analysis - **Date of maximum solar impact on adjacent buildings**

| | Existing | Proposed | 10’ Setback |
|---|---|---|---|
| **11am**<br>**Impact** |  |  |  |
| **12pm**<br>**Impact** |  |  |  |
| **1pm**<br>**Impact** |  |  |  |
| | **21st of December** | | **21st of December** |

1040 Broderick Sunlight Analysis - **Date of maximum solar impact on adjacent buildings**

Existing

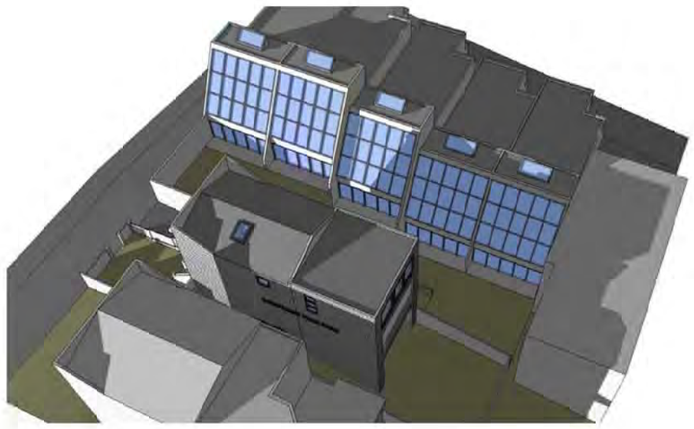
Proposed

10’ Setback

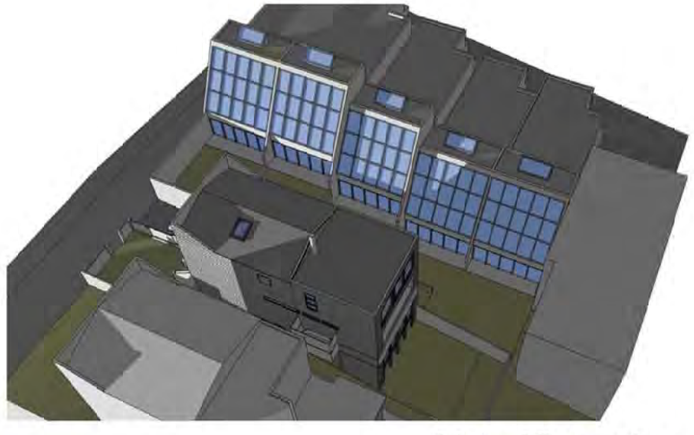
**2pm**

**Impact**

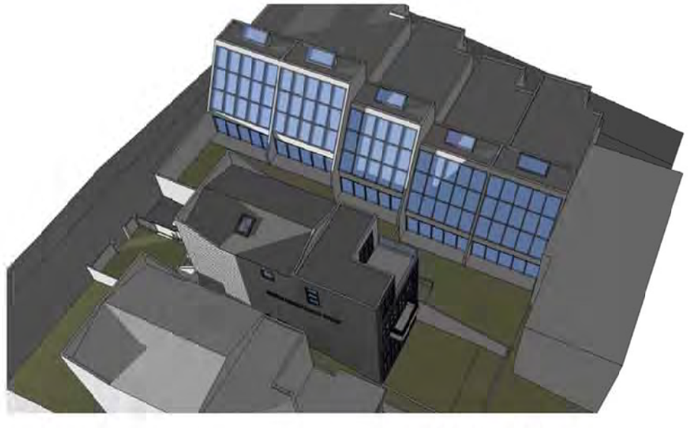
**3pm**



**4pm**



**21st of December**



**21st of December**

1040 Broderick Sunlight Analysis - **Date of maximum solar impact on adjacent buildings**

## ABBREVIATIONS

| | |
|---|---|
| ADJ | ADJUSTABLE |
| ALUM | ALUMINUM |
| ARCH | ARCHITECTURE |
| ASPH | ASPHALT |
| BD | BOARD |
| BDLG | BUILDING |
| BLK | BLOCK |
| BLKG | BLOCKING |
| BM | BEAM |
| B.O. | BOTTOM OF |
| BU | BUILT-UP |
| CLG | CEILING |
| CLR | CLEAR |
| CNTL | CONTROL |
| CONC | CONCRETE |
| CONT | CONTINUOUS |
| CTR | CENTER |
| DBL | DOUBLE |
| DF | DOUGLAS FIR |
| DIM | DIMENSION |
| DN | DOWN |
| DP | DOUBLE POLE |
| DS | DOWNSPOUT |
| DWG | DRAWING |
| (E) | EXISTING |
| E | EAST |
| EA | EACH |
| ELEC | ELECTRICAL |
| ELEV | ELEVATION |
| EQ | EQUAL |
| EXP | EXPOSED |
| EXT | EXTERIOR |
| FDN | FOUNDATION |
| FF | FINISH FLOOR |
| FIN | FINISH |
| FL | FLOOR |
| FOC | FACE OF CONCRETE |
| FOF | FACE OF FINISH |
| FOS | FACE OF STUD |
| FOP | FACE OF PLYWOOD |
| FURN | FURNACE |
| GA | GAUGE |
| GALV | GALVANIZED |
| GND | GROUND |
| GYP BD | GYPSUM BOARD |
| HB | HOSE BIB |
| HC | HOLLOW CORE |
| HDR | HEADER |
| HR STL | HOT-ROLLED STEEL |
| HVAC | HEATING, VENTILATING, AND AIR CONDITIONING |
| HW | HOT WATER HEATER |
| ICPV | INTEGRAL COLOR PLASTER VENEER |
| INSUL | INSULATION |
| INT | INTERIOR |
| LAM | LAMINATE |
| LT | LIGHT |
| MANUF | MANUFACTURER |
| MAX | MAXIMUM |
| MC | MEDICINE CHEST |
| MECH | MECHANICAL |
| MEMB | MEMBRANE |
| MIN | MINIMUM |
| MTL | METAL |
| (N) | NEW |
| NIC | NOT IN CONTRACT |
| NO OR # | NUMBER |
| O/ | OVER |
| OC | ON CENTER |
| OD | OUTER DIAMETER |
| OFCI | OWNER FURNISHED, CONTRACTOR INSTALLED |
| OFOI | OWNER FURNISHED, OWNER INSTALLED |
| OPNG | OPENING |
| PL | PLATE |
| PLYWD | PLYWOOD |
| PT | PRESSURE TREATED |
| R | RADIUS |
| RA | RETURN AIR |
| RDWD | REDWOOD |
| REF | REFERENCE |
| REG | REGISTER |
| REQ | REQUIRED |
| RET | RETURN |
| RM | ROOM |
| S | SOUTH |
| SA | SUPPLY AIR |
| SAD | SEE ARCHITECTURAL DRAWING |
| SED | SEE ELECTRICAL DRAWING |
| SF | SUBFLOOR |
| SHT | SHEET |
| SHTG | SHEATHING |
| SKD | SEE KITCHEN DRAWING |
| SLD | SEE LIGHTING DRAWING |
| SMD | SEE MECHANICAL DRAWING |
| SP | SINGLE POLE |
| SPD | SEE PLUMBING DRAWING |
| SQ | SQUARE |
| SS | SINGLE SHELF |
| SSD | SEE STRUCTURAL DRAWING |
| STD | STANDARD |
| T&G | TONGUE AND GROOVE |
| TO | TOP OF |
| TOFF | TOP OF FINISH FLR |
| TOP | TOP OF PLATE |
| TOS | TOP OF SLAB |
| TOW | TOP OF WALL |
| TP | TOILET PAPER HOLDER |
| TR | TOWEL RACK |
| TYP | TYPICAL |
| UON | UNLESS OTHERWISE NOTED |
| VERT | VERTICAL |
| VIF | VERIFY IN FIELD |
| W | WEST |
| W/ | WITH |
| W/O | WITHOUT |
| WC | WATER CLOSET |
| WD | WOOD |
| WIND | WINDOW |
| WP | WATERPROOF |

## PROJECT DIRECTORY

**OWNER**
Amanda Clarke
1040 Broderick Street,
San Francisco
CA 94115

**ARCHITECT**
CCS Architecture
44 McLea Court
SF CA 94103
Tel. 415.864.2800
Fax 415.864.2850
Cass Smith x 309

# CLARKE RESIDENCE

1040 Broderick Street
San Francisco
CA 94115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SAN FRANCISCO
CALIFORNIA 94103
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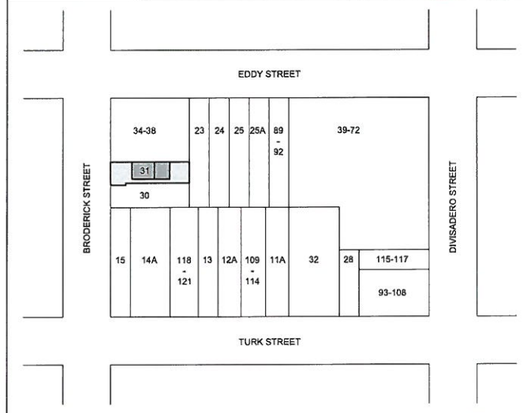
WWW.CCSARCHITECTURE.COM

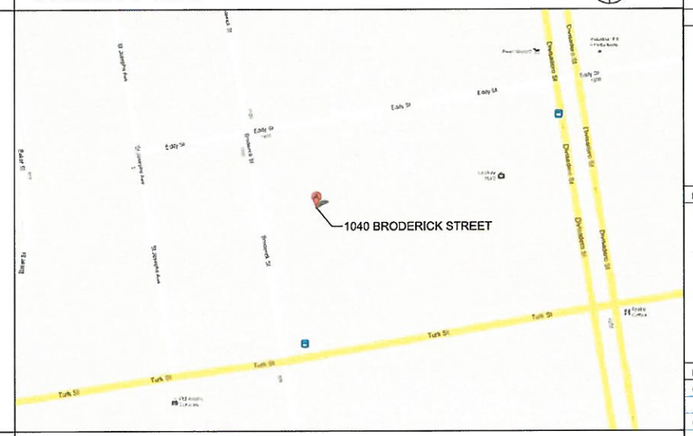

## LOCATION MAP

NORTH




## VICINITY MAP

NORTH




LICENSED ARCHITECT
CASS CALDER SMITH
NO. C22469
REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME
***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCISCO***
***CA 94115***

| ISSUED | DESCRIPTION |
|---|---|
| 04.18.12 | PRICING SET |
| 11.06.12 | HISTORIC REVIEW |
| 02.28.13 | SITE PERMIT |

SHEET TITLE
INFO SHEET

FILE 1.12230_A0.00.dwg
BY BJS
SCALE NA
SHEET

A0.00

## SYMBOLS

- 1HR RATED FULL HEIGHT WALL
- 2HR RATED FULL HEIGHT WALL
- (N) INTERIOR PARTITION WALL
- LANDLORD PARTITION WALL
- CLR. INDICATING CLEAR DIMENSION TO FINISHED FACE OF WALL INCLUDING MATERIALS.
  NOTE: "CLR." NOTATION ON DIMENSION STRING.
- 2'-0" CLR. — CLR. INDICATING CLEAR DIMENSION TO FINISHED FACE OF WALL INCLUDING MATERIALS.
- LINE BELOW OR HIDDEN LINE
- LINE ABOVE
- CENTER LINE
- PROPERTY LINE
- DIMENSION TO FACE OF STUD
  ALL DIMENSIONS ARE TO FACE OF STUD U.O.N.
- DIMENSION TO CENTERLINE

- 00 / A00.00 — DETAIL, SECTION, ELEVATION MARKER
- INTERIOR ELEVATION MARKER
- INTERIOR ELEVATION MARKER
- GRID LINE MARKER
- +0'-0" — ELEVATION POINT MARKER
- DATUM POINT MARKER
- 000 — DOOR TAG
- 000 — WINDOW TAG
- 000 — ROOM ID TAG
- 000 — KEYNOTE TAG
- 00 — REVISION NUMBER TAG

## SHEET INDEX



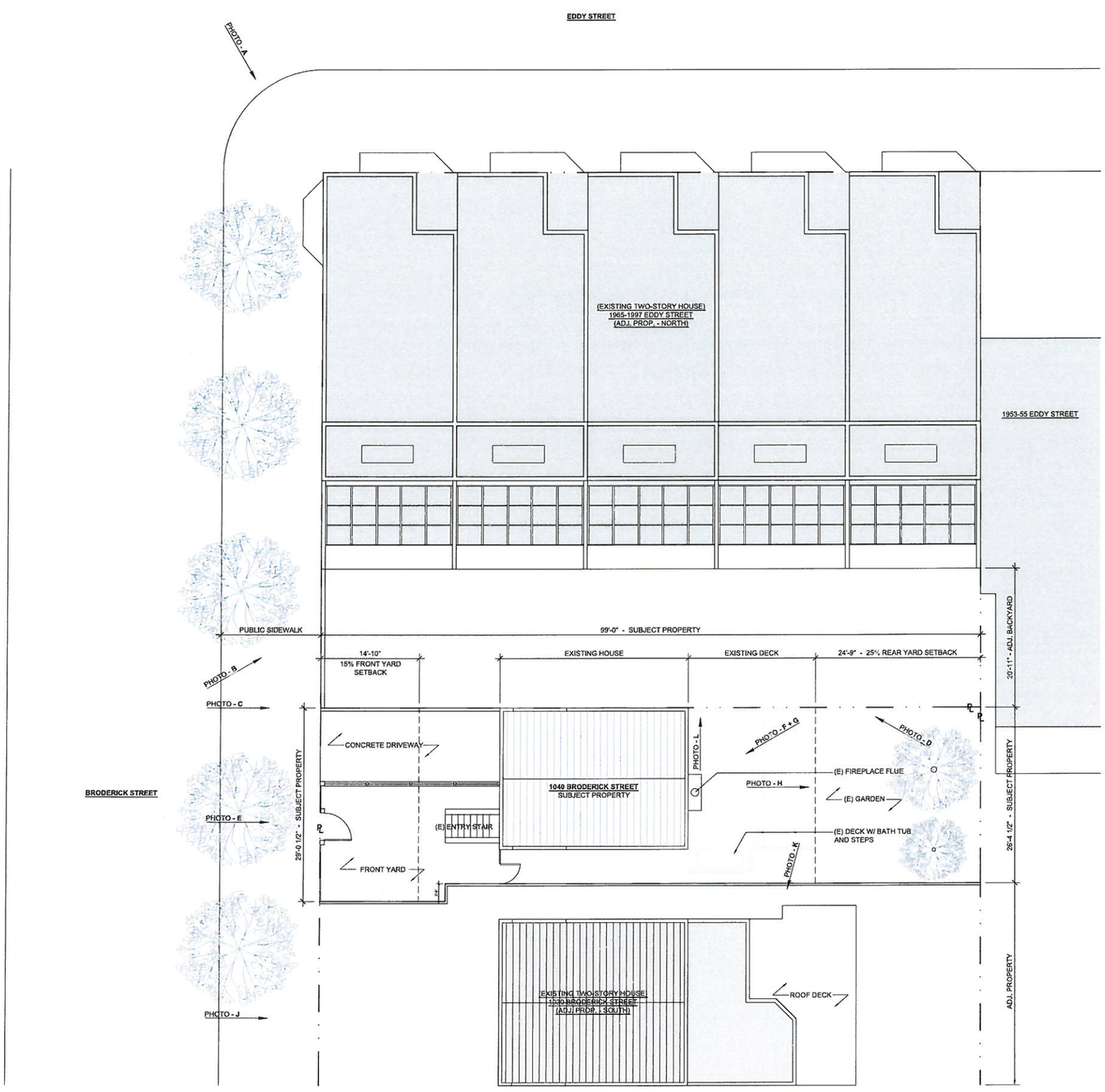
## PROJECT INFORMATION

| | |
|---|---|
| PROJECT ADDRESS: | 1040 BRODERICK STREET, SAN FRANCISCO, CA 94115 |
| TYPE OF CONSTRUCTION: | TYPE V-B |
| NUMBER OF STORIES: | 2 |
| OCCUPANCY TYPE: | R3 |
| ZONING | RM-3 RESIDENTIAL |
| HEIGHT LIMIT | 40-X |
| BLOCK / LOT: | 1129/031 |
| LOT AREA: | 2662 SF |

CONSTRUCTION AREA:

| EXISTING | | NEW |
|---|---|---|
| 600 | SF Basement | 406 SF |
| 0 | SF Basement deck | 80 SF |
| 590 | SF 1st floor | 236 SF |
| 0 | SF 1nd floor deck | 170 SF |
| 600 | SF 2nd floor | 321 SF |
| 1790 | SF Total Existing | **1213 SF Total New** |

| | |
|---|---|
| APPLICABLE CODES: | 2010 CALIFORNIA BLDG. CODE & S.F. AMENDMENTS<br>2010 CALIFORNIA ENERGY CODE & S.F. AMENDMENTS<br>2010 CALIFORNIA ELECT. CODE & S.F AMENDMENTS<br>2010 CALIFORNIA MECH. CODE & S.F. AMENDMENTS<br>2010 CALIFORNIA PLMBG. CODE & S.F. AMENDMENTS<br>2010 CALIFORNIA FIRE CODE & S.F. AMENDMENTS<br>2010 S.F. HOUSING CODE |
| PROJECT DESCRIPTION: | The project consists of a 3 story horizontal addition on the rear side of the existing 3 story residence. |




1 EX1.00 EXISTING PLOT PLAN
1/8" = 1'-0"

NORTH


CCS ARCHITECTURE
441 CLEA COURT
SAN FRANCISCO
CALIFORNIA 94110
tel 415 864 2800
fax 415 864 2880
www.ccs-architecture.com


LICENSED ARCHITECT
CASS CALDER SMITH
NO. C22469
REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME

***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCSICO***
***CA 94115***

| ISSUED | DESCRIPTION |
|---|---|
| 05.18.12 | PRICING SET |
| 11.06.12 | HISTORIC REVIEW |
| 02.28.13 | SITE PERMIT |
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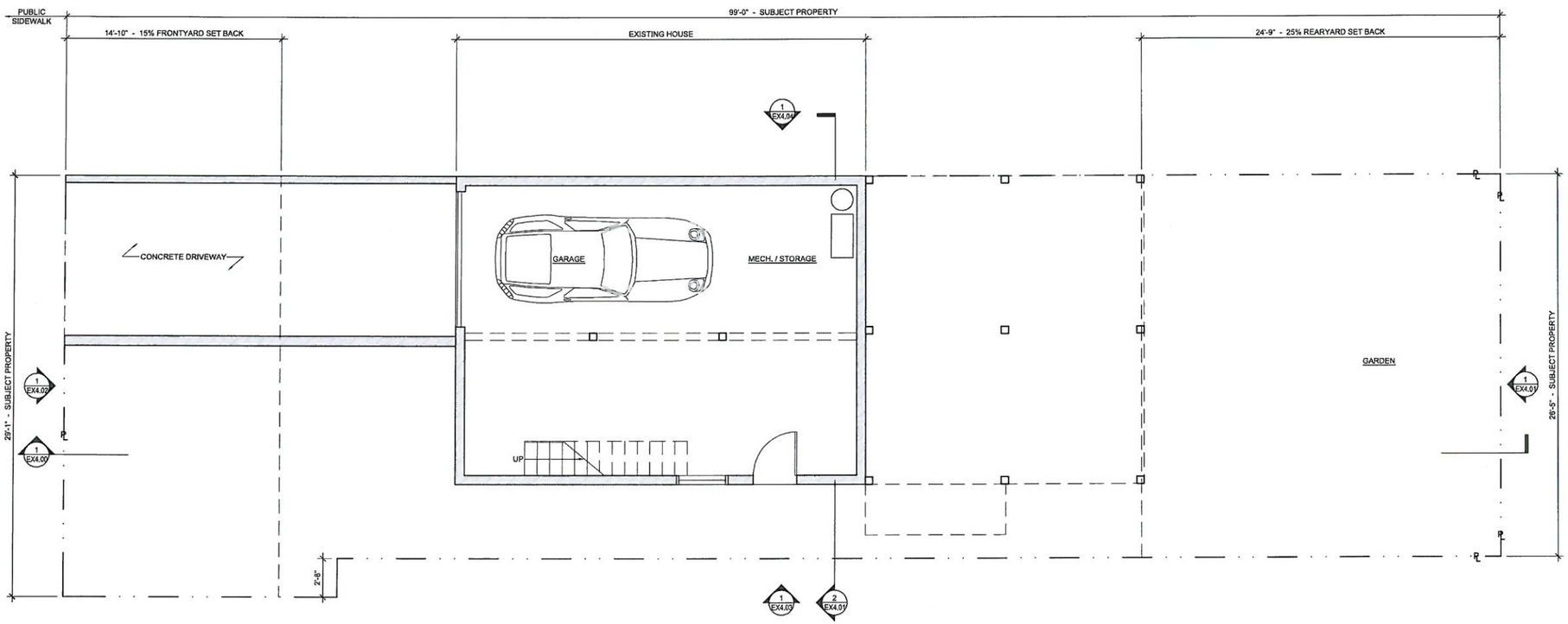
SHEET TITLE

SITE PLAN
WITH FOTO KEY

| | |
|---|---|
| FILE | 1.12230_EX1.00.dwg |
| BY | BJS |
| SCALE | 1/8" = 1'-0" |
| SHEET | |

EX1.00




1 EX2.00 EXISTING FLOOR PLAN - LEVEL 00
1/4" = 1'-0"

NORTH


CCS ARCHITECTURE
48 TURLEA COURT
SAN FRANCISCO
CALIFORNIA 94115
tel 415 864 2800
fax 415 864 2150


LICENSED ARCHITECT
CASS CALDER SMITH
NO. C22469
REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME

***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCSICO***
***CA 94115***

| ISSUED | DESCRIPTION |
|---|---|
| 02.28.13 | SITE PERMIT |
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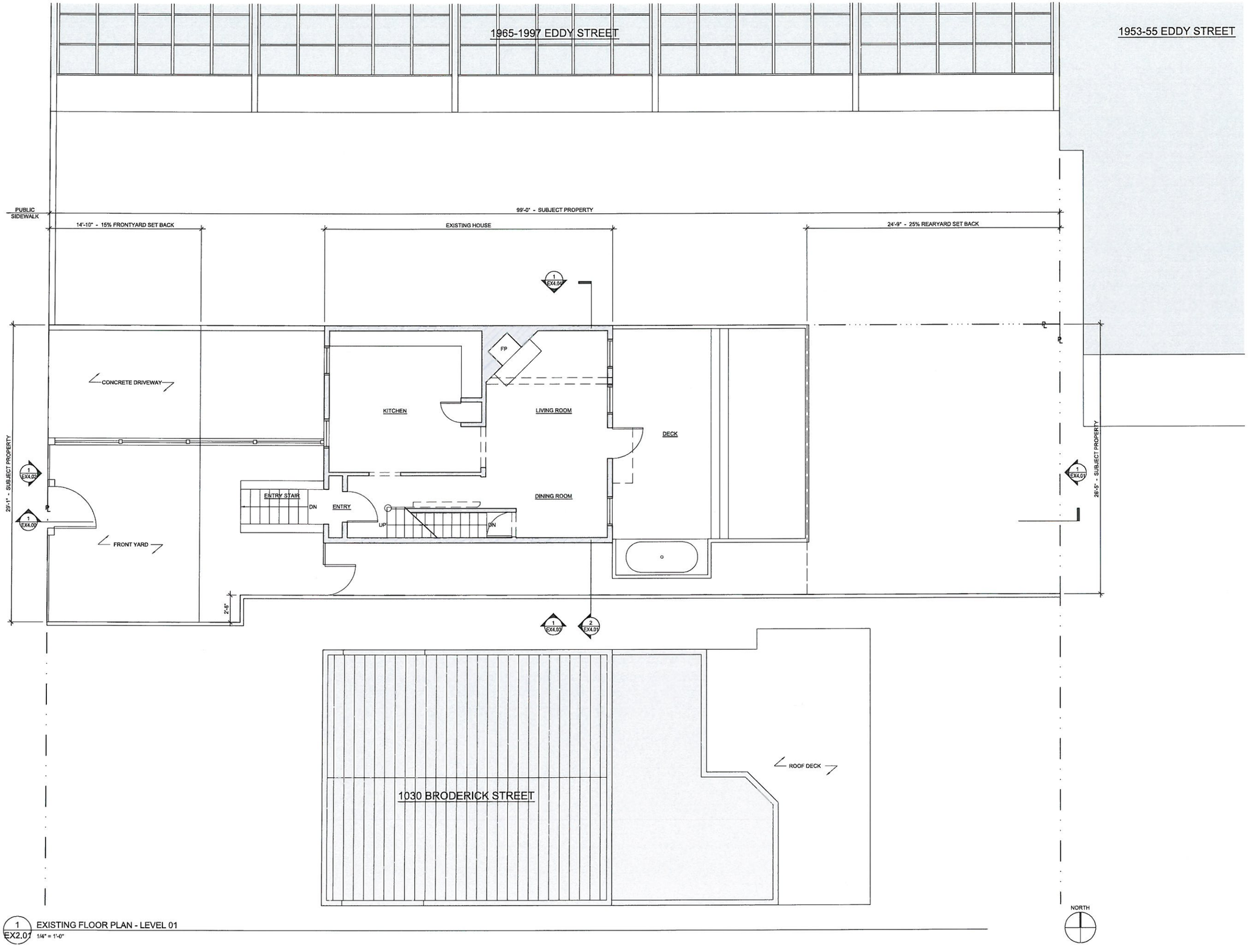
SHEET TITLE

EXISTING FLOOR PLAN
LEVEL 00

| | |
|---|---|
| FILE | 1.12230_EX2.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |
| SHEET | |

EX2.00




1 EX2.01 EXISTING FLOOR PLAN - LEVEL 01
1/4" = 1'-0"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LICENSED ARCHITECT
CASS CALDER SMITH
NO. C22469
REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME

***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCSICO***
***CA 94115***

| ISSUED | DESCRIPTION |
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| 02.28.13 | SITE PERMIT |
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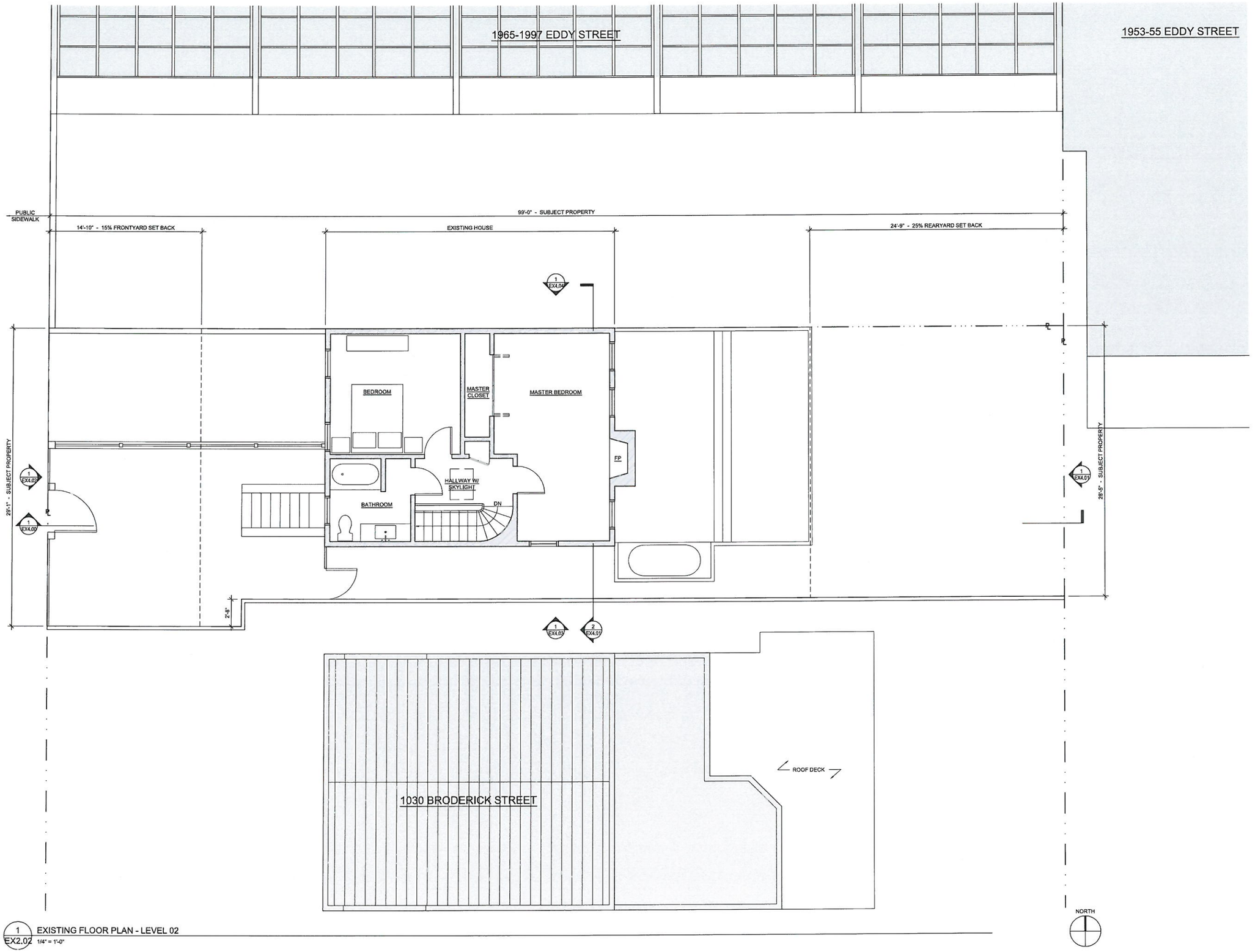
SHEET TITLE

EXISTING FLOOR PLAN
LEVEL 01

| | |
|---|---|
| FILE | 1.12230_EX2.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |

SHEET

EX2.01




1 EX2.02 EXISTING FLOOR PLAN - LEVEL 02
1/4" = 1'-0"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NO. C22469
REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME
***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCSICO***
***CA 94115***

| ISSUED | DESCRIPTION |
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| 02.28.13 | SITE PERMIT |
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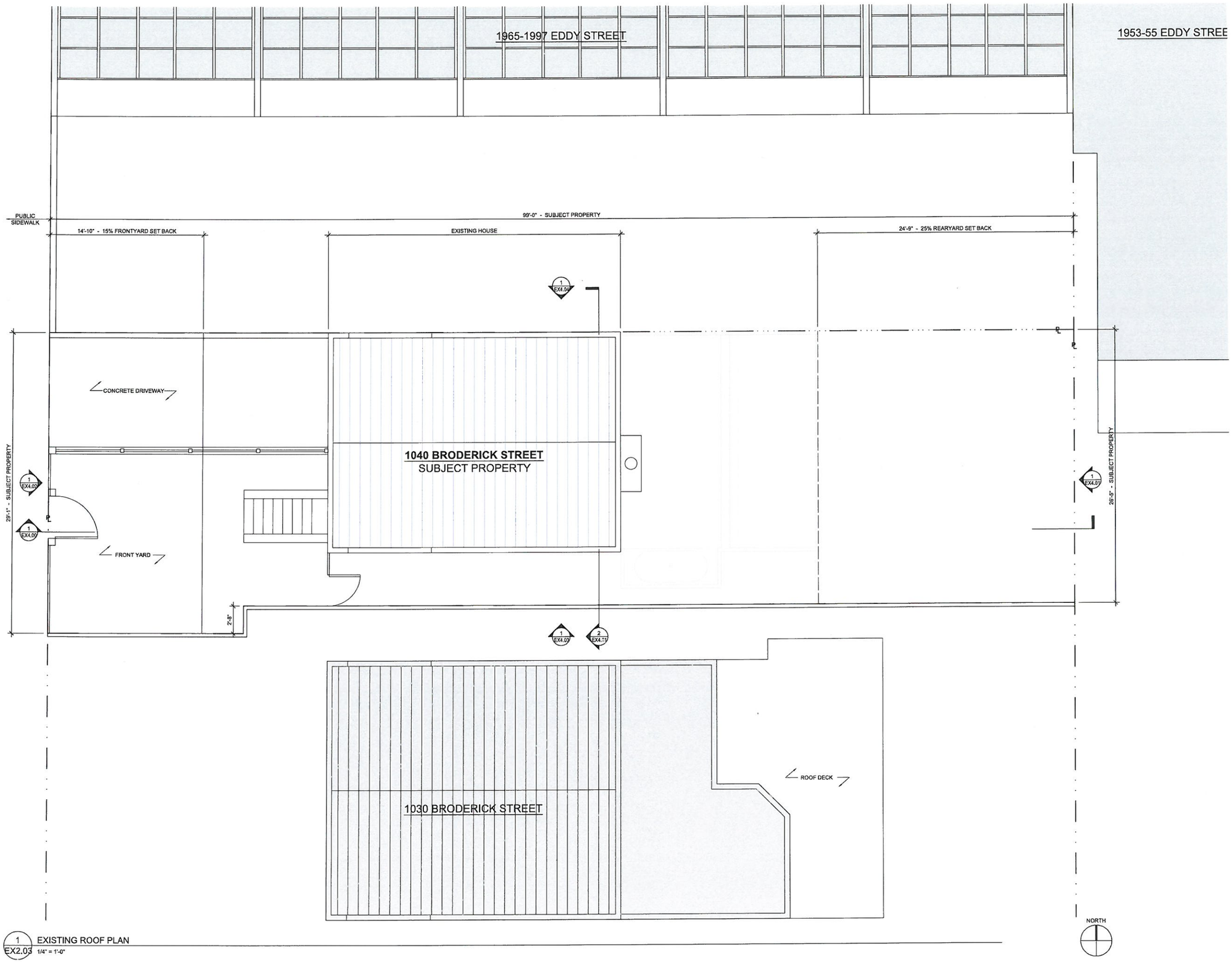
SHEET TITLE
EXISTING FLOOR PLAN
LEVEL 02

| | |
|---|---|
| FILE | 1.12230_EX2.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |
| SHEET | |

EX2.02




1 EX2.03 EXISTING ROOF PLAN
1/4" = 1'-0"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LICENSED ARCHITECT
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NO. C22468
REN. 7-31-13
STATE OF CALIFORNIA

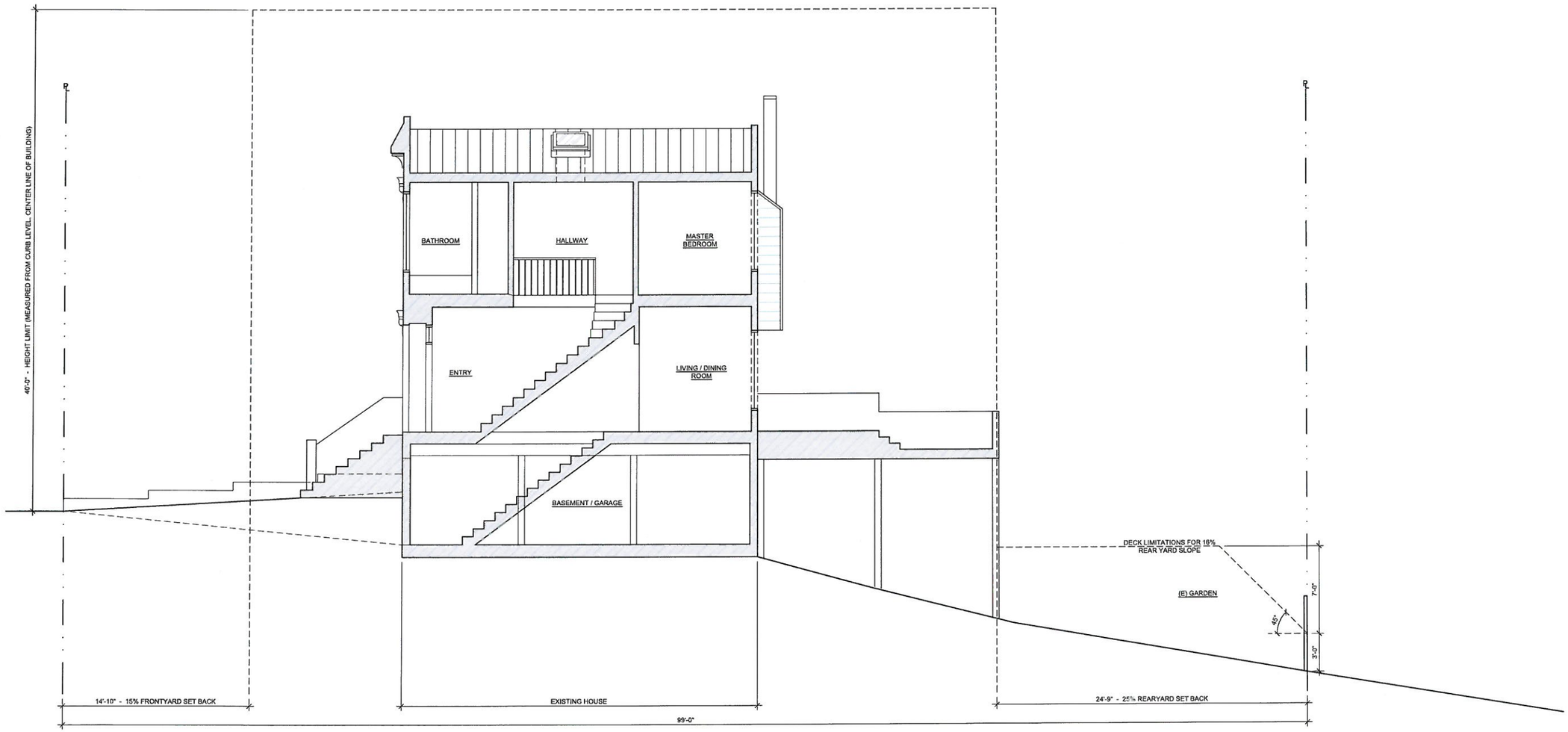
PROJECT NAME
***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCSICO***
***CA 94115***

| ISSUED | DESCRIPTION |
|---|---|
| 02.28.13 | SITE PERMIT |

SHEET TITLE
EXISTING ROOF PLAN

| | |
|---|---|
| FILE | 1.12230_EX2.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |
| SHEET | |

EX2.03




1 EX4.00 EXISTING BUILDING SECTION
1/4"=1'-0"

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LICENSED ARCHITECT
CASS CALDER SMITH
NO. C22469
REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME
***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCSICO***
***CA 94115***

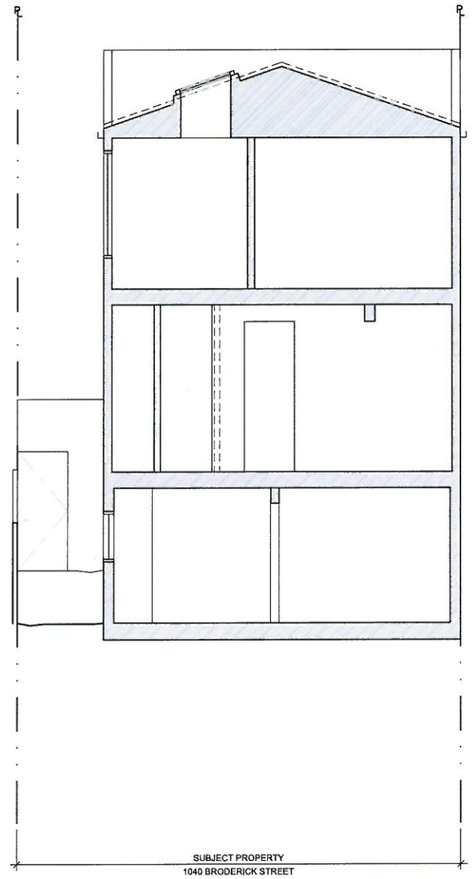
| ISSUED | DESCRIPTION |
|---|---|
| 02.28.13 | SITE PERMIT |

SHEET TITLE
BUILDING SECTION

| | |
|---|---|
| FILE | 1.12230_EX4.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |
| SHEET | |

EX4.00


1 EX4.01 EXISTING EAST FACADE ELEVATION (GARDEN SIDE)
1/4"=1'-0"




2 EX4.01 EXISTING BUILDING SECTION
1/4"=1'-0"

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LICENSED ARCHITECT
CASS CALDER SMITH
NO. C22469
REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME

***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCSICO***
***CA 94115***

| ISSUED | DESCRIPTION |
|---|---|
| 02.28.13 | SITE PERMIT |
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SHEET TITLE

BUILDING SECTION / EXTERIOR ELEVATION

| | |
|---|---|
| FILE | 1.12230_EX4.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |
| SHEET | |

EX4.01


1 EX4.02 EXISTING WEST FACADE ELEVATION (STREET SIDE)
1/4"=1'-0"

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LICENSED ARCHITECT
CASS CALDER SMITH
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REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME

***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCSICO***
***CA 94115***

| ISSUED | DESCRIPTION |
|---|---|
| 02.28.13 | SITE PERMIT |

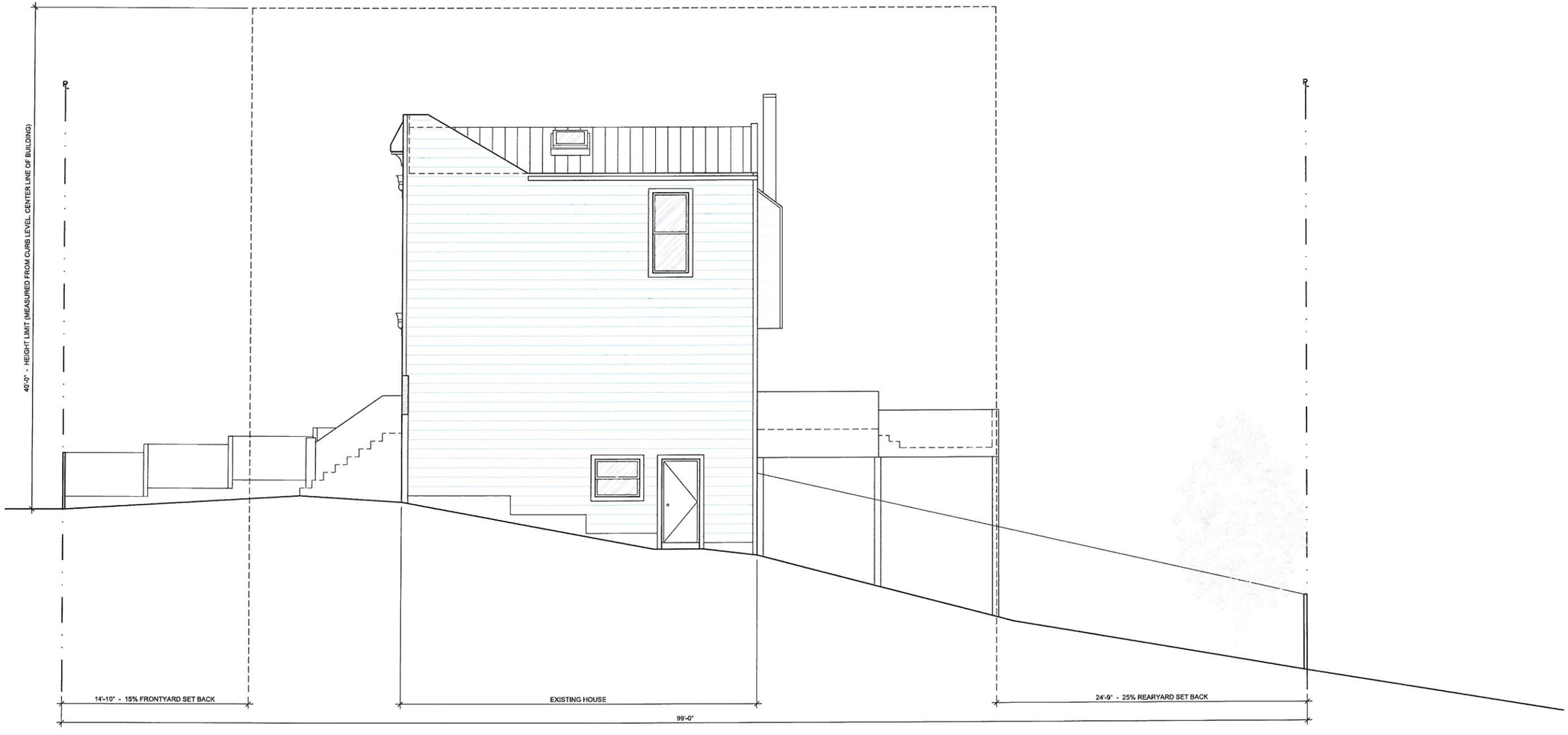
SHEET TITLE

EXTERIOR ELEVATION

| | |
|---|---|
| FILE | 1.12230_EX4.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |

SHEET

EX4.02




1 EX4.03 EXISTING SOUTH FACADE ELEVATION
1/4"=1'-0"

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fax 415 864 2801
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LICENSED ARCHITECT
CASS CALDER SMITH
NO. C22469
REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME

***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCSICO***
***CA 94115***

| ISSUED | DESCRIPTION |
|---|---|
| 02.28.13 | SITE PERMIT |

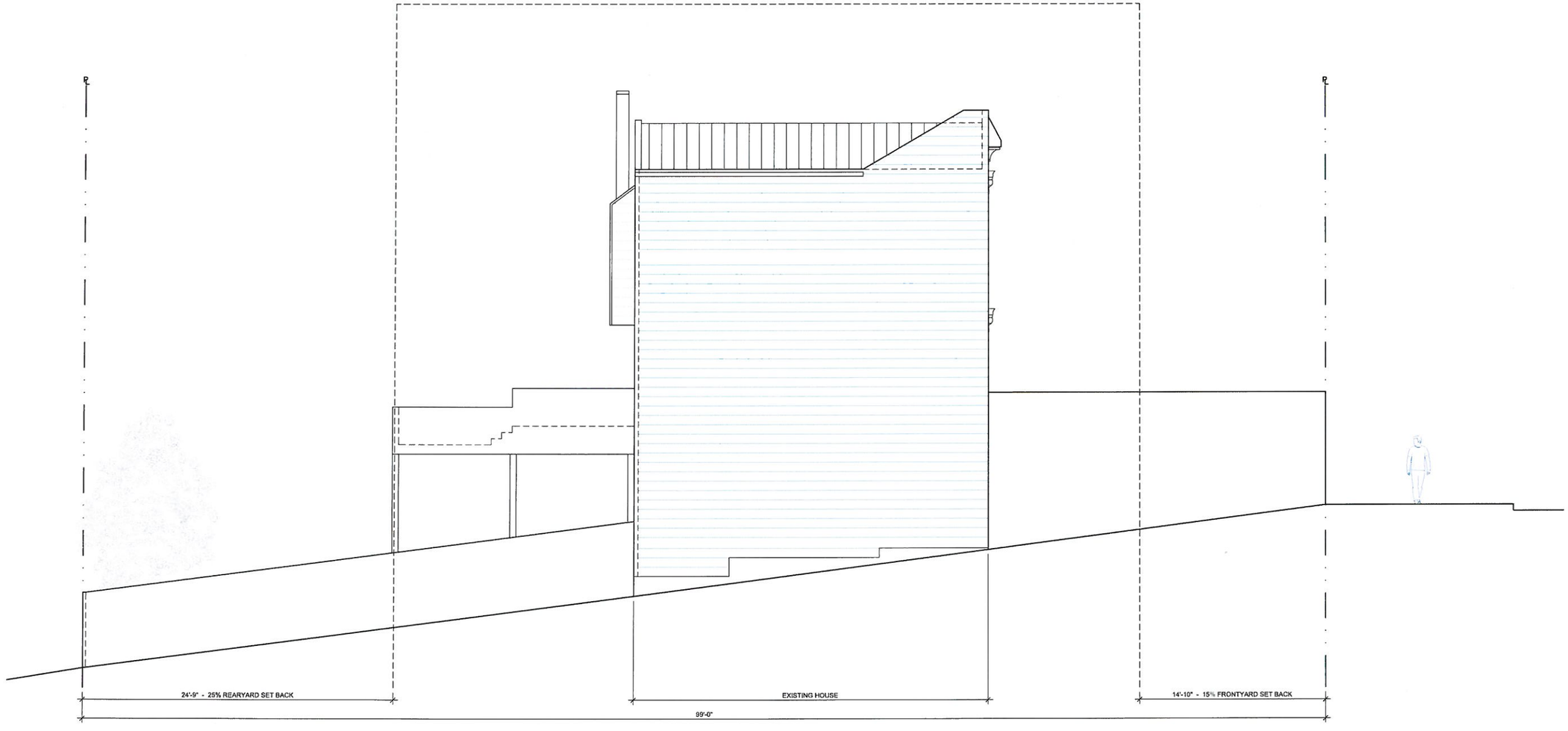
SHEET TITLE

EXTERIOR ELEVATION

| | |
|---|---|
| FILE | 1.12230_EX4.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |

SHEET

EX4.03




1 EX4.04 EXISTING NORTH FACADE ELEVATION
1/4"=1'-0"

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SAN FRANCISCO
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LICENSED ARCHITECT
CASS CALDER SMITH
NO. C12469
REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME

***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCSICO***
***CA 94115***

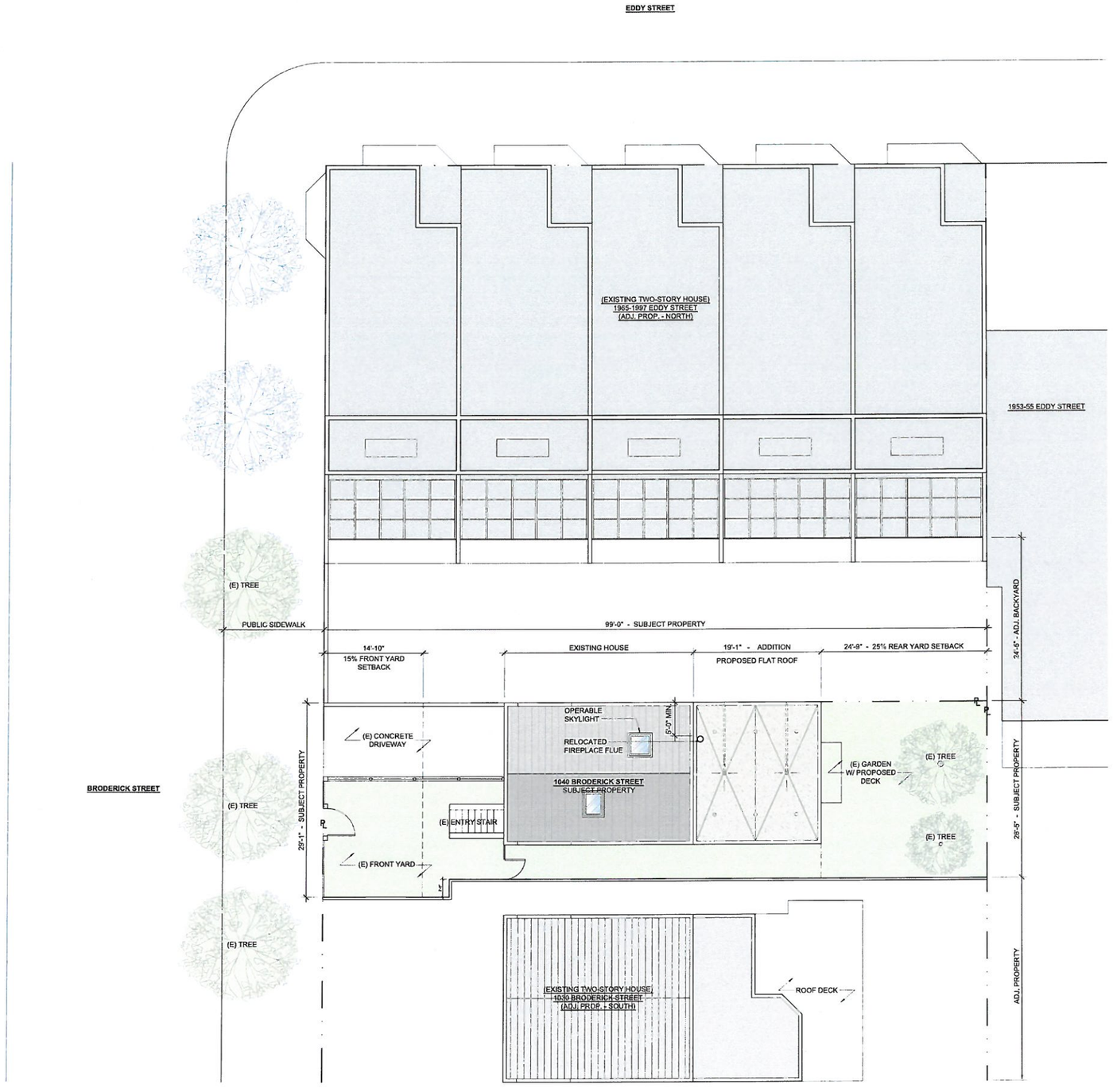
| ISSUED | DESCRIPTION |
|---|---|
| 02.28.13 | SITE PERMIT |

SHEET TITLE

EXTERIOR ELEVATION

| | |
|---|---|
| FILE | 1.12230_EX4.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |
| SHEET | |

EX4.04




1 A1.00 PLOT / ROOF PLAN
1/8" = 1'-0"

NORTH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441 CLEA COURT
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LICENSED ARCHITECT
CASS CALDER SMITH
NO. C22469
REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME

***CLARKE RESIDENCE***
***1040 BRODERICK ST.***
***SAN FRANCSICO***
***CA 94115***

| ISSUED | DESCRIPTION |
|---|---|
| 04.18.12 | PRICING SET |
| 11.06.12 | HISTORIC REVIEW |
| 02.28.13 | SITE PERMIT |
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SHEET TITLE

SITE PLAN

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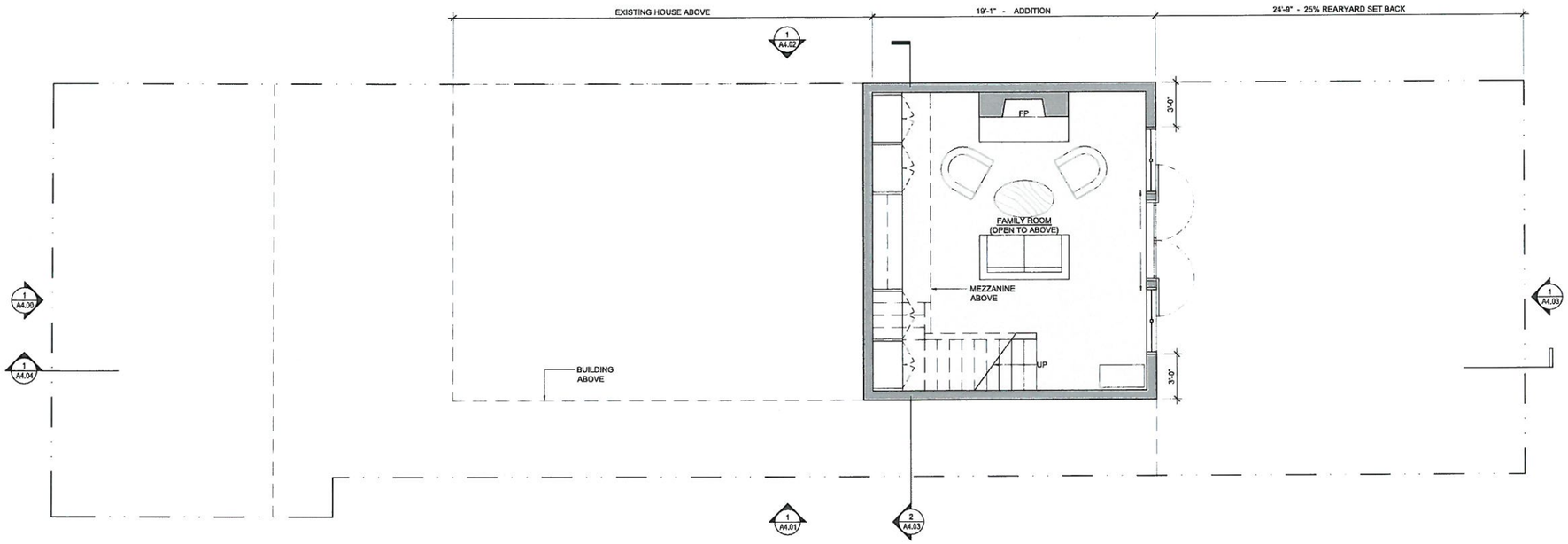
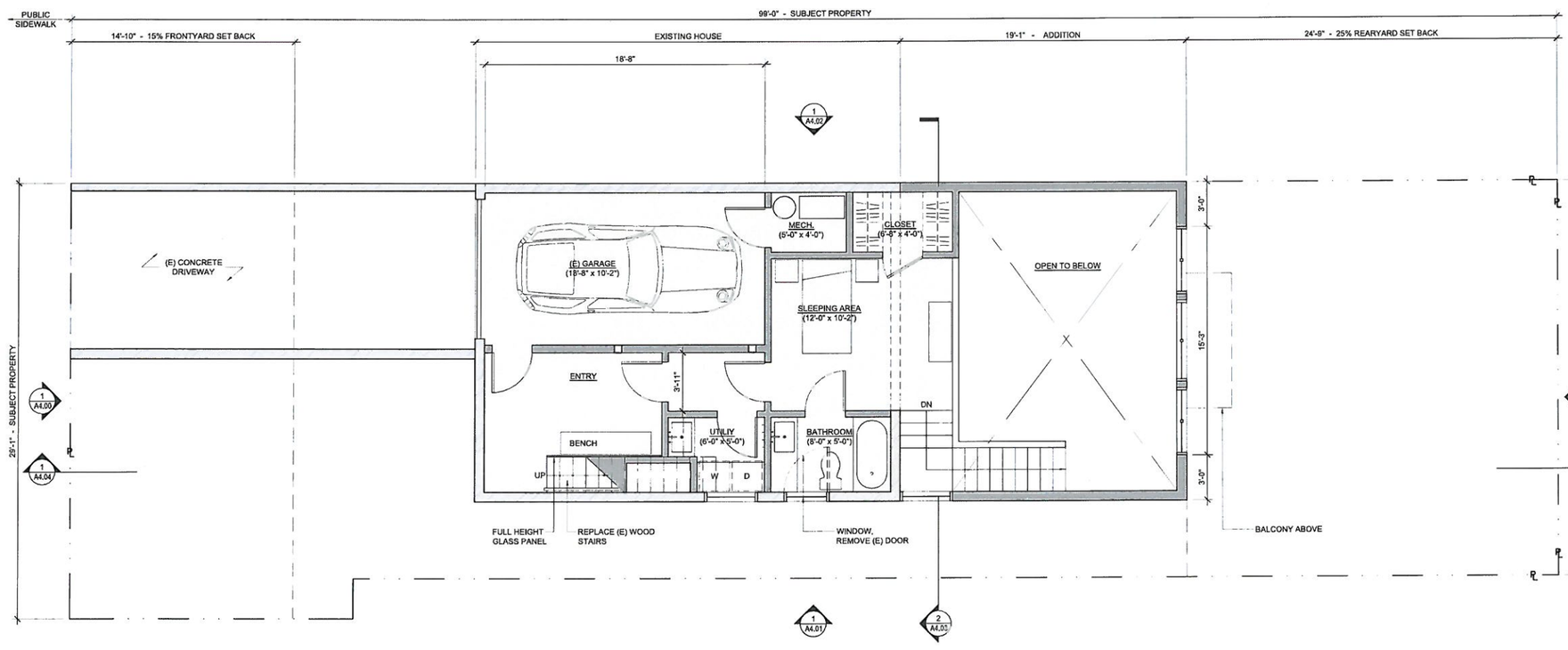
| BY | BJS |
| SCALE | 1/8" = 1'-0" |

SHEET

A1.00




2 A2.00 FLOOR PLAN - LOWER MEZZANINE FLOOR LEVEL
1/4" = 1'-0"




1 A2.00 FLOOR PLAN - GROUND FLOOR MEZZANINE LEVEL
1/4" = 1'-0"

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SHEET TITLE

FLOOR PLAN
LEVEL 00

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| FILE | 1.12230_A2.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |

SHEET

A2.00

1965-1997 EDDY STREET

1953-55 EDDY STREET

PUBLIC SIDEWALK

99'-0" - SUBJECT PROPERTY

14'-10" - 15% FRONTYARD SET BACK

EXISTING HOUSE

19'-1" - ADDITION

24'-9" - 25% REARYARD SET BACK

3'-0"

24'-5" - ADJACENT BACKYARD

1 A4.02

FIREPLACE FLUE ABOVE

RANGE

REF.

KITCHEN

FP

CONCRETE DRIVEWAY

SINK

D.W.

LIVING ROOM

3'-0"

3'-1 1/2"

BALCONY

9'-0"

42" HIGH METAL GUARDRAIL

REPLACE (E) WOOD FLOORING

DEMOLISH (E) FIREPLACE, EXTERIOR EAST WALL, KITCHEN CLOSET, KITCHEN COUNTER

1 A4.03

ADD CABINETS

DINING ROOM

3'-1 1/2"

3'-0"

29'-1" - SUBJECT PROPERTY

1 A4.00

(E) ENTRY STAIR

DN

(E) ENTRY

UP

DN

1 A4.04

FRONT YARD

DEMOLISH (E) DOOR

FURR-OUT WALL TO ALIGN WITH BASEMENT WALL, V.I.F.

(E) WOOD STAIRS

HIGH WINDOWS

DEMOLISH (E) DECK STRUCTURE AND TUB

26'-5" - SUBJECT PROPERTY

2'-6"

1 A4.01

2 A4.03

1030 BRODERICK STREET

ROOF DECK

ADJACENT PROPERTY - SOUTH

LEGEND

(E) WALL - FULL HEIGHT

WALL - FULL HEIGHT

DEMOLITION

NORTH

0 1' 2' 4' 8' 16'

1 A2.01 FLOOR PLAN - 1ST FLOOR LEVEL

1/4" = 1'-0"


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CARLO CALDER SMITH
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REN. 7-31-13
STATE OF CALIFORNIA

PROJECT NAME

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***1040 BRODERICK ST.***
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***CA 94115***

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SHEET TITLE

FLOOR PLAN
LEVEL 01

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| FILE | 1.12230_A2.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |
| SHEET | |

A2.01

1965-1997 EDDY STREET

1953-55 EDDY STREET

PUBLIC SIDEWALK

99'-0" - SUBJECT PROPERTY

14'-10" - 15% FRONTYARD SET BACK

EXISTING HOUSE

19'-1" - ADDITION

24'-9" - 25% REARYARD SET BACK

24'-5" - ADJACENT BACKYARD

29'-1" - SUBJECT PROPERTY

26'-5" - SUBJECT PROPERTY

1 A4.02

DEMOLISH (E) WALLS, ADD CLOSETS

HIGH FIXED 45 MIN. FIRE RATED WINDOW

OPERABLE SKYLIGHT

FIREPLACE FLUE

(E) BEDROOM 12'-8" x 11'-9"

STUDY 8'-4" x 11'-9"

MASTER CLOSET #1 4'-6" x 11'-9"

MASTER BEDROOM 17'-1" x 11'-4"

3'-0"

6'-4"

2'-11"

6'-0"

3'-0"

3'-4"

(E) HALLWAY W/ (E) SKYLIGHT

(E) BATHROOM

DN

LAUNDRY 5'-2" x 4'-4"

W

D

STEAM SHOWER W/ BENCH 4'-6" x 4'-4"

MASTER BATHROOM 12'-8" x 8'-6"

REPLACE (E) DOORS / HARDWARE

FREESTANDING BATH TUB

1 A4.00

1 A4.04

1 A4.01

2 A4.03

1 A4.03

2'-6"

1030 BRODERICK STREET

ROOF DECK

ADJACENT PROPERTY - SOUTH

LEGEND

(E) WALL - FULL HEIGHT

WALL - FULL HEIGHT

DEMOLITION

NORTH

0 1' 2' 4' 8' 16'

1 A2.02 FLOOR PLAN - 2ND FLOOR LEVEL

1/4" = 1'-0"


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REN. 7-31-13
STATE OF CALIFORNIA

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***CA 94115***

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SHEET TITLE

FLOOR PLAN
LEVEL 02

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| SCALE | 1/4" = 1'-0" |
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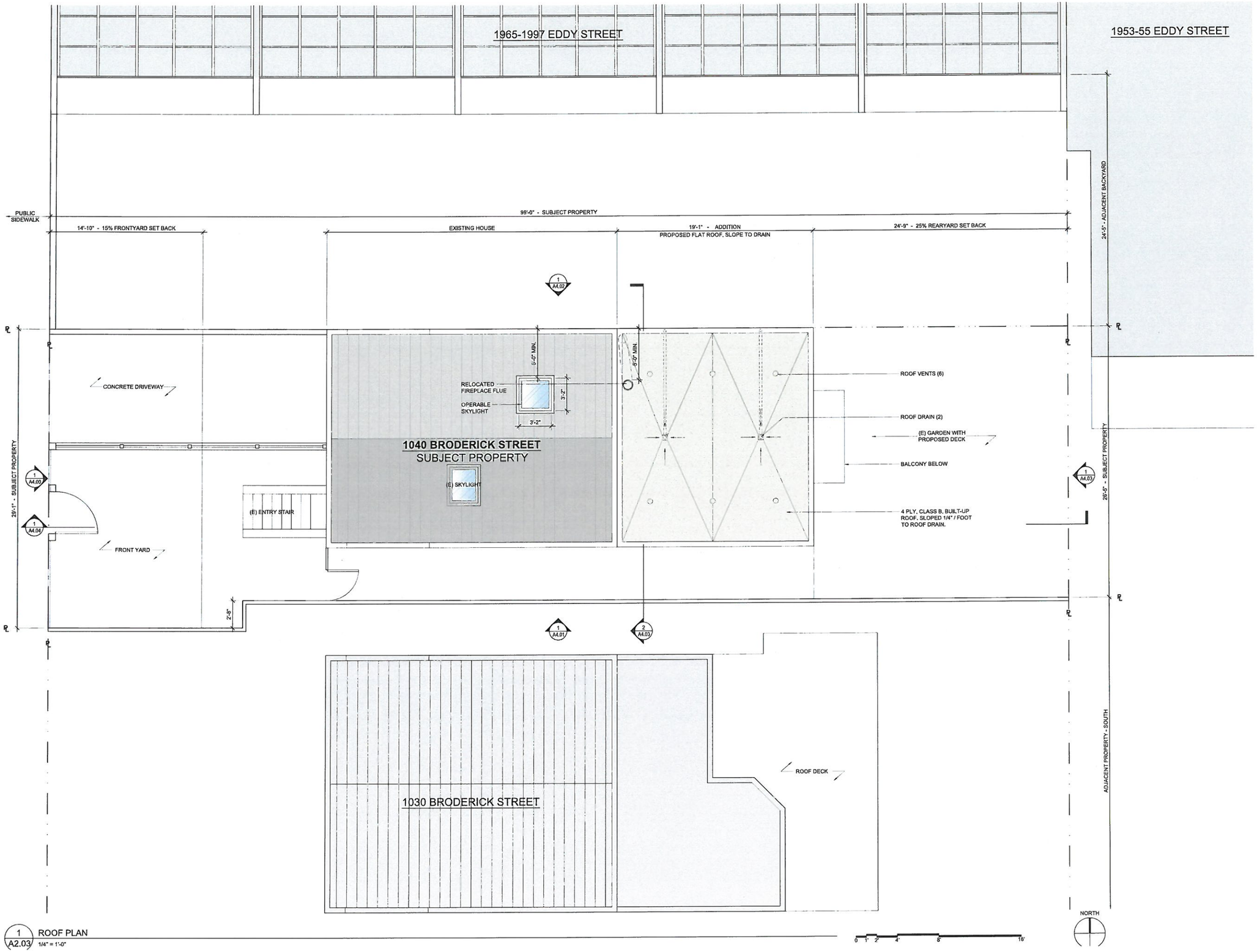
A2.02




1 A2.03 ROOF PLAN
1/4" = 1'-0"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SHEET TITLE

ROOF PLAN

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| SCALE | 1/4" = 1'-0" |

SHEET

A2.03

NOTE:
NO WORK ON FRONT ELEVATION EXCEPT REPLACE (E) WINDOWS WITH MARVIN WOOD WINDOWS TO MATCH


1 A4.00 WEST FACADE ELEVATION (STREET SIDE)
1/4"=1'-0"


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| 04.16.12 | PRICING SET |
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SHEET TITLE
EXTERIOR ELEVATION

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| BY | BJS |
| SCALE | 1/4" = 1'-0" |
| SHEET | |

A4.00


1 A4.01 SOUTH FACADE ELEVATION
1/4"=1'-0"


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PROJECT NAME

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SHEET TITLE

EXTERIOR ELEVATION

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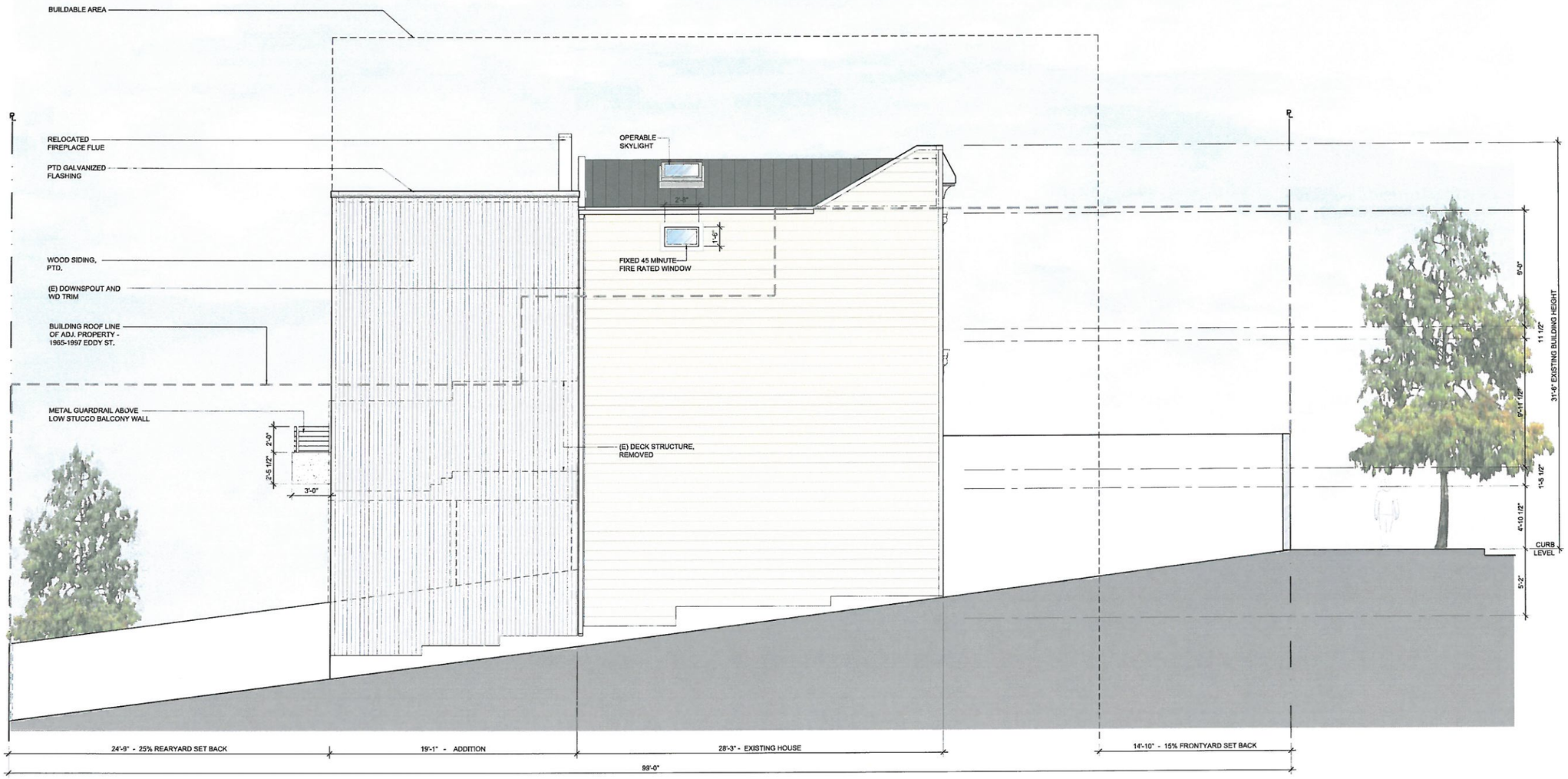
| SHEET | |

A4.01




1 A4.02 NORTH FACADE ELEVATION
1/4"=1'-0"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SHEET TITLE

EXTERIOR ELEVATION

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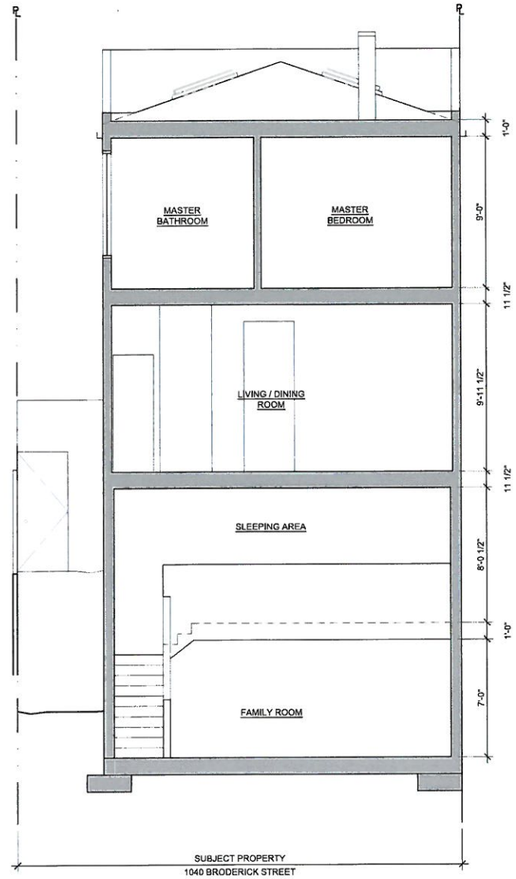
| SCALE | 1/4" = 1'-0" |

SHEET

A4.02


1 A4.03 PROPOSED EAST FACADE ELEVATION (GARDEN SIDE)
1/4"=1'-0"




2 A4.03 BUILDING SECTION - PHASE II
1/4"=1'-0"

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SHEET TITLE

BUILDING SECTION / EXTERIOR ELEVATION

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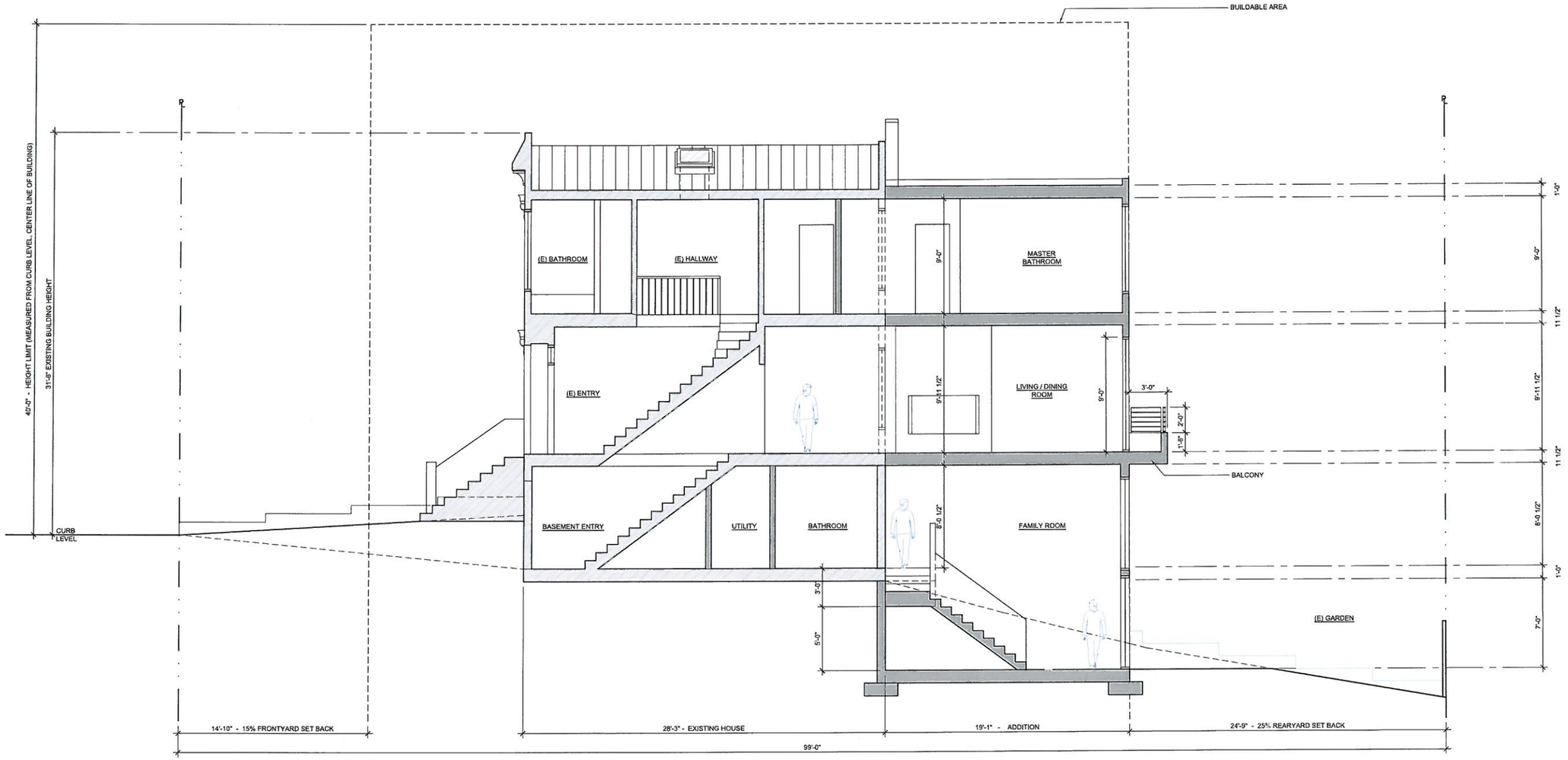
A4.03




1 A4.04 BUILDING SECTION
1/4"=1'-0"

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SHEET TITLE
BUILDING SECTION

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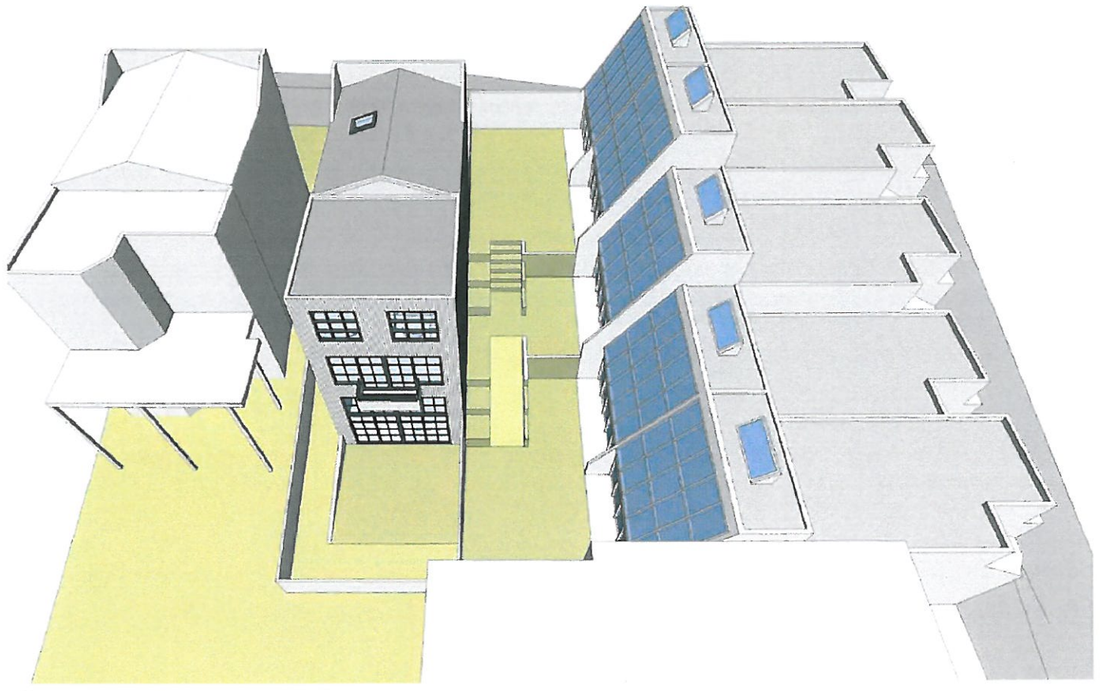
|---|---|
| FILE | 1.12230_A4.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |
| SHEET | |

A4.04

2 A4.60 PERSPECTIVE - BIRDS VIEW FROM NORTH-WEST
1/4"=1'-0"



1 A4.60 PERSPECTIVE - BIRDS VIEW FROM SOUTH-EAST
1/4"=1'-0"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SHEET TITLE
PERSPECTIVES

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|---|---|
| FILE | 1.12230_A4.00.dwg |
| BY | BJS |
| SCALE | 1/4" = 1'-0" |

SHEET
A4.60