

Oxford Tract Planning Committee Report

February 1, 2018

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Table of Contents

1. Background.....	3
2. Linkages to PMB & ESPM Academic Programs	5
3. Student Organic Garden.....	7
4. Research & Instructional Fields.....	8
5. Alternative Sites Considered.....	10
6. Options for Mixed Usage of Oxford Tract	12
7. Recommended Next Steps	15

Appendices

- A. Letter from Dean Gilless to IEVCP Christ on Impacts of possible re-purposing of Oxford Tract Research Facility (9/25/2016)
- B. Appendix to letter from Dean Gilless (9/25/2016)
- C. University Research Greenhouse Locations, Informal Poll of Greenhouse Managers
- D. Report on the Student Organic Garden located at the Oxford Tract
- E. Housing Master Plan Task Force Report (January 2017)
- F. Housing Survey Preliminary Findings (Fall 2017)
- G. Charge Letter to Oxford Tract Planning Committee (OTPC) (4/10/2017)
- H. OTPC Meeting Summary Notes
- I. Map of Oxford Tract and Possible Alternate Sites
- J. Comments received from CNR community members (3/16/2017)
- K. Site Ratings (6/20/2017)
- L. Charge Letter to 2017-18 Housing Master Plan Advisory Group (4/10/2017)

1. Background

The Oxford Tract is the site of greenhouse, insectary, quarantine, controlled environment, and laboratory facilities, as well as growing fields and a student organic garden, supporting the instructional, research, and outreach mission and programs of the College of Natural Resources (CNR) at the University of California, Berkeley (UC Berkeley). It reflects both the heritage of CNR, which evolved out of a merger of the College of Agricultural Sciences and the School of Forestry that took place in 1974, and the heritage of the University of California as a land-grant university established under the auspices of the Morrill Act of 1862 with the intent “...without excluding other scientific and classical studies and including military tactic, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.” [7 U.S.C. § 304] Although the Morrill Act financed the establishment of the land-grant universities using the proceeds of federal land sales, the Oxford Tract became a site of the University of California much later through an opportunistic purchase by the UC Regents of a block of homes (640 structures) destroyed in the 1923 Berkeley fire.

Facilities at the Oxford Tract are used by researchers from the following organizations:

- CNR, Department of Plant and Microbial Biology (PMB)
- CNR, Department of Environmental Science, Policy and Management (ESPM)
- L&S Division of Biological Sciences, Department of Integrative Biology
- L&S Division of Social Sciences, Department of Geography
- College of Chemistry
- Plant Gene Expression Center
- Joint BioEnergy Institute (JBEI)
- Energy Biosciences Institute (EBI)
- Innovative Genomics Institute (IGI)
- Joint Genome Institute (JGI)
- Lawrence Berkeley National Laboratory (LBNL).

The research building infrastructure assets at the Oxford Tract, collectively referred to hereafter as the Oxford Tract Research Facility (OTRF) include:

- Three glass-enclosed structures (greenhouses) for plant propagation (37,500 sq. ft.) and 2,611 sq. ft. of shared “head house” space for associated operations.
- Approximately 10,663 sq. ft. of associated space used for storage and support activities for greenhouse operations, as well as ten laboratory rooms (5,520 sq. ft.).
- Nine plant growth chambers that provide tightly controlled environmental conditions, that support additional plant research activities.
- Various support equipment and spaces, such as autoclaves, pot washing facilities, seed drying and storage rooms, a pesticide storage room, cold boxes, and a machine shop.
- Two secure structures (lath houses) for plant and insect experiments under outdoor conditions (8650 sq. ft.).
- An insectary building (2970 sq. ft.) that provides temperature and photoperiod controlled rooms for insect and other arthropods.

- The Natural Resources Laboratory (NRL) (6600 sq. ft.), that houses additional temperature-controlled insect-rearing space and a USDA APHIS-certified quarantine facility, in addition to core campus laboratory space for three faculty members.

These assets, described in more detail in the memo (**Appendix A**) on the subject “Impacts of possible re-purposing of Oxford Tract Research Facility” dated September 25, 2016 from CNR Dean Gilless to IEVCP Christ are particularly important for approximately forty faculty members with appointments in the Department of Plant and Microbial Biology (PMB) and the Department of Environmental Science, Policy, and Management (ESPM) – see **Appendix B**. The fate of the research facilities at the Oxford Tract is of critical concern for these faculty members and their associated research teams – collectively comprising more than two hundred members of the UC Berkeley community.

ESPM’s excellence is attested to by a variety of national and international rankings: *US News and World Report* ranks Berkeley #1 globally in Environment/Ecology; the *QS World University Rankings* put Berkeley as #1 in Environmental Sciences and #5 in Agriculture and Forestry. ESPM’s perennial status as the top recipient of National Science Foundation Graduate Fellowships, not just at Berkeley, but in the nation, attests to the strength of its graduate students.

PMB consistently ranks at or near the top of rankings of research programs in both plant science and microbiology, as one might expect from a unit with more than ten active or recently retired members of the National Academy of Sciences. Berkeley ranked in the interval from number #1 to #7 in the last National Research Council rankings. The most recent *US News and World Report* global rankings in Plant and Animal Sciences ranked Berkeley #4 – despite it not having a veterinary school.

It should be noted that the OTRF houses a considerable amount of material that is either transgenic (plants) or under quarantine (insects and other arthropods) subject to regulation of movement by federal agencies:

- [Guide to U.S. Regulation of Genetically Modified Food and Agricultural Biotechnology Products](#)
- [APHIS Regulatory Policy for Transgenic Organisms](#)
- [USDA Animal and Plant Health Inspection Service Import Plants and Pests Containment Facility Inspections](#)
- [Containment Guidelines for Nonindigenous, Phytophagous Arthropods and Their Parasitoids and Predators](#)

Relocation of transgenic organisms would almost certainly constrain the types of plants that could be grown in adjacent spaces.

Due in part to the proximity of the OTRF to research laboratories located in Koshland Hall, Mulford Hall, Wellman Hall, and Hilgard Hall, there is not a clear distinction between the activities that take place on the central “Campus Park” and those which take place within the OTRF, *i.e.*, disentangling these activities is not analogous to the way CNR’s ecologists divide their activities between their laboratories on the university campus and Natural Reserve sites or CNR’s research forests.

2. Linkages to PMB & ESPM Academic Programs

In the Committee's consultations with CNR faculty and students (graduate and undergraduate), the OTRF's proximity to research laboratories on campus and more generally to the central campus emerged as the single most important factor contributing to its educational and research effectiveness and productivity. The faculty and the students were adamant that these facilities should be viewed as an integral part of the campus portfolio of instructional and research spaces. While there are seasonal fluctuations in the quantity of plants, insects, and other materials transported to and from the OTRF, such movement occurs year-round.

Faculty, graduate and undergraduate students, and post-doctoral scholars in ESPM and PMB feel strongly that relocation of the activities that take place at the OTRF to a site that is not within easy (less than 15 minutes) walking distance of their laboratories on the central campus (mostly in Koshland, Mulford, and Hilgard Halls) would seriously hamper their ability to effectively conduct research. It would also impose significant hardships for students who would be forced to rely on public transportation to participate in the relocated activities. This is because their work entails frequent, in-person visits to the OTRF from laboratories and offices located on the central campus, and/or involves the transport of plants and insects to and from these locations. There are specific issues concerning transport across a significant distance: (1) a significant fraction of the plants and insects are either transgenic or subject to quarantine, such that their movements are regulated; (2) cost, feasibility and risk of using private or rental vehicles and parking; and (3) unsuitability of mass transit or for-hire transit to transfer heavy, bulky, or restricted materials.

Reasons why the proximity of the OTRF is critical for the research activities of faculty, graduate and undergraduate students, and post-doctoral scholars include the following:

- Various treatments/crosses are performed on plants or insects and the responses to these manipulations are measured at intervals that necessitate trips multiple times a day between central campus offices and laboratories and the OTRF. The greater the distance, the greater the productivity loss due to time spent in transit or increase in personnel costs to accomplish the same work.
- Federal regulations require strict containment during transport or could even prohibit the movement of transgenic or quarantine material over longer distances.
- Most peer research universities have greenhouse space that is located within a five-minute walking distance of faculty offices and laboratories on the main campus (see **Appendix C**). Relocation of the research activities at the OTRF to a site farther away than this standard would almost certainly have a negative impact on the recruitment and retention of faculty, graduate students, and post-doctoral scholars, and potentially would decrease competitiveness for federal grants.
- Undergraduate students involved in the campus Undergraduate Research Apprentice Program (URAP) and the CNR Sponsored Projects in Undergraduate Research (SPUR) program and senior honor's thesis projects move back and forth between the central campus and the OTRF more than once a day to participate in research activities.

The OTRF is used for both formal and informal instruction. It supports the following courses:

- PMB 24 Freshman Seminar (19 = 95% of limit enrolled in Fall 2017)
- PMB 107L Principles of Plant Morphology (24 = 92% of limit enrolled in Fall 2016)
- ESPM 117 Urban Garden Ecosystems (63 = 90% of limit enrolled in Fall 2017)
- ESPM 118 Agricultural Ecology (58 = 97% of limit enrolled in Fall 2017)
- ESPM 155AC Sociology & Political Ecology of Agro-Food Systems (212 = 98% of limit enrolled in Fall 2016)

CNR courses presently can include weekly instructional laboratory sessions at the OTRF.

Laboratory sessions held at a more distant location would force students to use public transportation, raising financial and accessibility barriers, so that the frequency of the laboratory sessions would need to be reduced to occasional “field trips” rather than remaining a very integral part of the student learning experience.

Less easily documented, but probably of much greater significance, is usage of the OTRF for informal instruction by undergraduate students, graduate students, and post-doctoral scholars participating in the research activities of the faculty. The OTRF is a key asset for CNR’s efforts to provide “Berkeley Discovery” experiences through mechanisms such as the CNR SPUR program and Student Organic Garden activities.

The concerns noted above are echoed by undergraduate students who participate in formal and informal instructional and experiential activities at the OTRF. From their perspective, relocation of activities to a site further away from the central campus so as to require them to use public transportation or bicycles would dramatically reduce their capacity to engage in those activities.

3. Student Organic Garden

The campus has a variety of gardens supporting both formal and informal instructional and experiential learning experiences for students. UC Berkeley gardens include:

- Blake Garden
- Clark Kerr Garden
- Student Organic Garden (located at the northwest corner of the Oxford Tract)
- UC Botanical Garden
- UC Gill Tract Community Farm
- UC Village Community Garden
- Sustainable Campus Landscape gardens near Barker Hall and Mulford Hall

The total availability of garden spaces to the campus community is not as significant as the length of this list might imply, due to their limited size (reflecting UC Berkeley's urban setting) and funding. This is in stark contrast to the situation at UC Davis, UC Santa Cruz, and Stanford University, reflecting the size and character of each campus' landscape, historical land-use decisions, and philanthropic support.

To differing degrees, the UC Berkeley gardens are also important to the quality of life and health of many undergraduate students and graduate students, their family members, and members of the local community. A student recently was hired with funding from the UCOP Global Food Initiative to promote better coordination and communication between the different gardens and their overlapping associated stakeholder communities. Their collective goals include:

- Food production for the campus Basic Needs program
- Experiential learning and training
- Interdisciplinary research and collaboration
- Fostering community

Student interest in gardens is significant and increasing, as evidenced by an average annual enrollment of 265 in the DeCal courses that use the Student Organic Garden at the Oxford Tract, mostly facilitated by members of the Student Organic Garden Association (SOGA), founded in 1971 by CNR students who felt the need for a physical space to put into practice what they were learning in the classroom. SOGA has considerable autonomy in running the Student Organic Garden, under the guidance of a faculty advisor. This student group's work has been facilitated greatly since 2014 through 3-4 paid management positions available to students each semester. As of fall 2017, these paid positions are eligible for the Federal Work-Study Program.

Through SOGA, students have the opportunity to work in garden operations; event planning; educational programming; grant writing and reporting; and non-profit administration, finance, communication, *etc.* SOGA also partners with community organizations such as the Berkeley Rose Waldorf School, the Multicultural Exchange for Sustainable Agriculture (MESA), Siemens Healthcare, the Suitcase Clinic, and the Ecology Center.

SOGA estimates that each year ~2,000 UC Berkeley students and community members make some use of the Student Organic Garden at the Oxford Tract, and that they provide ~400 pounds of produce to the UC Berkeley Food Pantry. A detailed report prepared by SOGA on the Student Organic Garden and activities is attached as **Appendix D**.

4. Research & Instructional Fields

What is now the UC Davis campus started with the UC Regent's purchase of land near Davisville in 1906 to support the work of UC Berkeley scientists. Over time, some agricultural research and education efforts at Berkeley transitioned to Davis, particularly those requiring growing fields with large footprint. The research and instructional activities that remained on the Berkeley campus were those that could be adequately supported at the Oxford Tract or the Gill Tract in Albany. It always has been understood that field spaces are essential for CNR's research and instructional programs. In fact, demands on the growing fields in the Berkeley campus portfolio have intensified over the years due to new research opportunities (most recently, CRISPR/Cas9 applications involving field crops).

Accessibility is an important attribute of the growing fields used for research and instructional programs at UC Berkeley. While the research utilization of these fields may vary over time with urban agroecological practices, research in biological pest control, and the popularity of different model systems (*e.g.*, maize *vs.* *Arabidopsis*) based on faculty interest and funding priorities of the U.S. Department of Agriculture, National Science Foundation, and the U.S. Department of Energy (DOE), it is clear that demand for field access will only increase in the foreseeable future as research activities under the DOE Joint Genome Institute, the Innovative Genomics Institute, and the Plant Gene Expression Center ramp up at Berkeley.

Most students (undergraduate and graduate) neither own a car nor have campus parking privileges; therefore, low-cost options must be available for students to access field spaces that are not close to the central campus. Public transportation has limited capacity to compensate for lack of proximity, and is not suitable for the transport of plant material, dry ice, liquid nitrogen, transgenic organisms, and planting or harvesting equipment.

The infrastructure requirements for even a basic level of usage of the fields for instruction and research include adequate water supply and water delivery systems; lockable storage sheds or access to other indoor spaces where equipment can be kept as needed; shade/shelter; restrooms nearby. It is impractical to move significant volumes of material (*e.g.*, seeds, planters, nets for bird protection, shovels, *etc.*) to/from off-site storage on a regular basis. Personal vehicles are often unsuitable for this purpose, aside from the issue of financial burdens of car ownership and parking. The use of undergraduate or graduate students as drivers to support research and instructional field use, although sometimes appropriate or even necessary, should be minimized for many reasons.

Some examples to illustrate why the proximity of the fields affects the research activities of faculty, graduate students, and post-doctoral scholars include:

- Monitoring and sampling of plants in fields can entail multiple daily measures.
- Frequent visits are made to fields during some times of the year to collect tissue for RNA, DNA, or protein extraction. The procedure for handling these tissues can be time sensitive, requiring either the carrying of liquid nitrogen or dry ice to the field, or very quickly bringing the material back to campus for processing and analysis in shared lab facilities housing more sophisticated (expensive) equipment.
- Pollinations for some plants require daily visits during a 2-3 week time window. For example, maize ears need to be bagged daily and tassels need to be monitored for pollen shed.
- Transgenic seeds or seedlings must be transported to the field in special containers. Such plants need to be closely monitored for signs of reproduction and then covered with bags to prevent open pollinations or pollen drift. This period of reproductive maturity can span 2-3 weeks or longer and requires daily visits.
- Transgenic plants may not be grown anywhere near food plants of the same species that would be harvested since this would offer the possibility of dissemination of transgenes, which is not permitted under USDA APHIS regulations.
- The fields need to be secured so that researchers are safe, experiments are not susceptible to vandalism or predation, and equipment or plants are not stolen.

5. Alternative Sites Considered

The Oxford Tract was identified by the UC Berkeley Housing Master Plan Task Force in its report dated January 2017 as a site of high priority for development of new student housing (see **Appendix E**). Results from a survey of undergraduates, graduate students, and postdocs conducted during the Spring 2017 semester indicate that postdocs and graduate students rank very highly the Oxford Tract among available university owned sites for potential housing, while undergraduate students rank the Oxford Tract more highly than the Smyth-Fernwald site (see **Appendix F**, Slide 31). Therefore, in April of 2017 IEVCP Christ established this Oxford Tract Planning Committee to evaluate and recommend feasible options for relocating the programs and research activities at the Oxford Tract to one or more other UC Berkeley locations. The work of the committee was to entail the development of criteria to guide site assessment; identification and assessment of specific potential relocation sites; and preparation of a financial analysis for each option (see **Appendix G**). Committee meeting summary notes are provided in **Appendix H**.

The committee began its work by touring the Oxford Tract to learn about the various programs and activities that it supports, as well as logistical operations. It was noted that replication of necessary infrastructure at multiple sites would not only require significant capital investment but also increase the level of staffing required to ensure adequate support and coordination of activities across the sites. Afterwards the members of the committee visited the following prospective alternate sites for accommodating one or more programs and research activities that currently are located at the Oxford Tract:

- Gill Tract (Albany)
- Strawberry Canyon
- Smyth-Fernwald site
- People's Park

Annotated satellite images of the various sites are provided in **Appendix I**.

The committee discussed comments received from CNR community members (**Appendix J**) and developed the following list of site criteria:

- Proximity to campus
- Sunlight
- Topography
- Soil quality
- Security
- Personal safety
- Capacity for expansion

Each of the aforementioned prospective alternate sites was rated with regard to these criteria (see **Appendix K**). Subsequently, the committee discussed the importance of each criterion for each of the programs/activities currently located at the Oxford Tract. Afterwards further work was done to investigate additional potential sites for the greenhouses, insectary, NRL and research and instructional fields (see the 7/31/17 meeting summary notes in Appendix H).

The committee reached consensus that:

- The Strawberry Canyon and Smyth-Fernwald sites would pose significant logistical challenges for the research and instructional programs of PMB and ESPM, and almost certainly would require dedicated transportation services between the northwest quadrant of the core campus and either/both of those sites.
 - The Strawberry Canyon site is not sufficiently large to accommodate all of the necessary greenhouse and insectary facilities.
 - Due to seismic safety issues at the Smyth-Fernwald site, it is unlikely to be a good site for greenhouse or insectary facilities worth tens of millions of dollars. Pending further study of the soil quality and earthquake risks, it could accommodate research and instructional fields or student garden needs.
- Relocation of the Student Organic Garden or the instructional field to the Gill Tract would pose insurmountable logistical challenges for students (detrimental to the activities and programs supported by the garden and field) and hence is not a viable option.
- The current security issues at People's Park make this site unattractive for a student garden. This situation may change in the long term, however, if student housing and public service programs were to be established at this site.
- The instructional and research activities supported by the OTRF could be accommodated within new facilities with a significantly smaller footprint at the Oxford Tract. Presently the greenhouses and supporting lab spaces, insectary greenhouse and building, NRL, and parking lots occupy more than half of the area of the Oxford Tract. This is not out of necessity, but rather is the result of the available amount of land at the time of their construction.

6. Options for Mixed Usage of Oxford Tract

Following the guiding principles of advancing the academic mission of the university, optimizing the use of scarce campus development sites, and responsible investment, the agglomeration of research, teaching, and housing programs at the Oxford Tract should be considered. Figure 1(a) shows a satellite image of the Oxford Tract in its current configuration. The options presented herein balance the needs of the current users of the Oxford Tract and the need for additional student housing, and were developed after consultation with administrative leaders including Rosemarie Rae (Vice Chancellor, Finance) and Stephen Sutton (Interim Vice Chancellor, Student Affairs, and co-Chair of the 2017-18 Housing Master Plan Advisory Group – see **Appendix L**) and in consideration of input from other stakeholders of the Oxford Tract.

In light of the fact that proximity to laboratories on campus and to the Student Organic Garden is critically important for the educational and research activities that are currently supported by the OTRF and that it should be possible to accommodate these activities within a smaller footprint – although at potentially much higher cost – the following options should be considered:

- **Option 1:** Replace the South Greenhouse, Insectary Greenhouse and Insectary Building, and Natural Resources Laboratory activities with new buildings of smaller total footprint, and reduce the size of the fields. This option would require the establishment of growing fields for research and/or instruction at one or more alternative sites (possibly the Gill Tract, Smyth-Fernwald, and/or the UC Botanical Garden) to make up for the lost acreage. It would provide roughly 1.75 acres for housing development – see Figure 1(b).
- **Option 2:** Relocate the fields to alternative sites and build all-new OTRF buildings where the fields presently are located. This option would provide roughly 2.5 acres for housing development on the land occupied by the OTRF today – see Figure 1(c). The research field possibly could be relocated to the Gill Tract; the instructional field possibly could be relocated to the Smyth-Fernwald site or possibly could be relocated to the UC Botanical Garden, which has regular shuttle service and hence is more accessible to students.

It should be noted that the acreage numbers indicated in Figure 1(b) and Figure 1(c) are rough estimates based on the percentage of the 4.5-acre Oxford Tract that is covered by NEW STUDENT HOUSING. (These figures are intended to conceptually illustrate the options, rather than to serve as precise layouts.) As discussed below, expert analyses are needed to accurately estimate the required footprint of the new greenhouses and other research facilities, and subsequently to determine the amount of area available for the fields under Option 1 and for student housing under Options 1 and 2. High-yield, vertical greenhouses have been developed for farming, but the use of multi-storied greenhouses for research is uncharted territory.

For either of these options, the research and educational activities at the Oxford Tract must continue unabated as new buildings are being constructed and as new fields are being prepared at alternative sites. It will be necessary to protect the soil in the field and student organic garden from contamination during construction. Demolition to make room for new housing development would commence after relocation of activities to the new buildings.

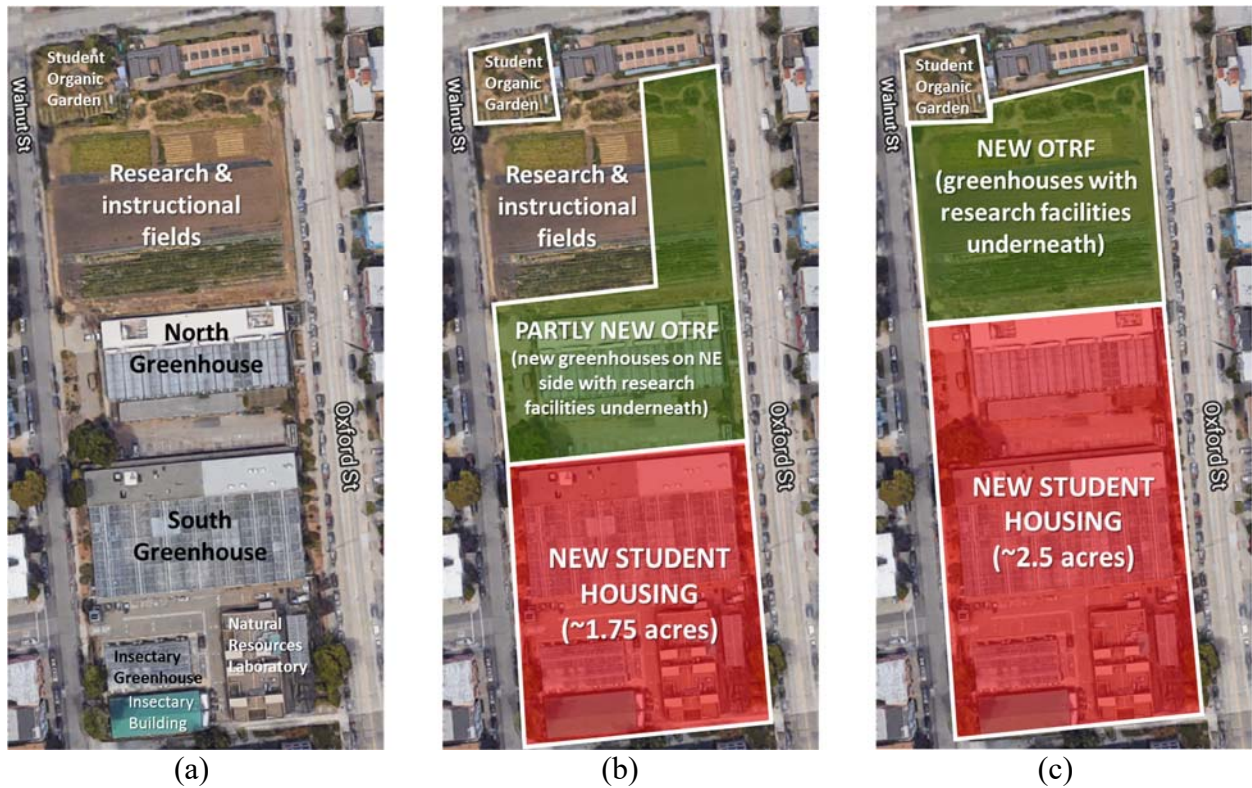


Figure 1: Satellite (Google Earth) images of Oxford Tract: (a) current (b) Option 1, (c) Option 2.

Since the new student housing would be built on the south side of the greenhouses and/or fields, it is important to design the residence building(s) to allow adequate sunlight to reach these research facilities. This can be achieved by setting back the building(s) and/or using a terraced building design. (Currently there is a 165 ft setback between Warren Hall and the Insectary Greenhouse. A similar distance would be needed between multi-story residences and the greenhouses and/or fields.) The development of greenhouses on the rooftops of residence halls or other campus buildings was deemed to be financially and architecturally impractical due to the HVAC and supporting lab infrastructure that would be required, the need for independent access paths to the rooftops, water/waste water handling, *etc.*

Advantages and further considerations for each option are listed below:

Option	Advantages	Additional considerations
1	<ul style="list-style-type: none"> • Lower cost of building new greenhouses, labs, and research facilities, and for establishing new fields at alternative sites • Less opposition from students using the Oxford Tract and community members 	<ul style="list-style-type: none"> • The North Greenhouse and supporting facilities are 25 years old, have a relatively large single-story footprint. • The field area remaining after accommodating the required footprint of the new greenhouse and research facilities (to be determined by experts) may not be adequate for any particular purpose. • Regular transportation would be needed for those who use and maintain the relocated field, in addition to dedicated university-owned vehicles with parking spaces and insurance. • Relocation of field activities will require installation, augmentation, or renovation of facilities to meet APHIS standards for research activities and to support researchers and students (e.g., utilities, storage, restrooms, shade).
2	<ul style="list-style-type: none"> • More area for new student housing • More area at alternative sites for research and instructional fields 	<ul style="list-style-type: none"> • Regular transportation would be needed for those who use and maintain the relocated fields, in addition to dedicated university-owned vehicles with parking spaces and insurance. • Relocation of field activities will require installation, augmentation, or renovation of facilities to meet APHIS standards for research activities and to support researchers and students (e.g., utilities, storage, restrooms, shade).

7. Recommended Next Steps

For both Options 1 and 2, an outside expert consultant should be hired to conduct a study of the Oxford Tract site and develop conceptual designs and feasibility studies for multi-storied greenhouse/research facility buildings that minimize footprint while accommodating anticipated future research needs. Examples of such experts are listed in the 8/7/2017 OTPC meeting summary notes (Appendix H). In addition, each of the prospective field sites requires expert assessment with regard to requirements for instructional and research purposes, before it can be deemed to be a viable alternative site. For Option 2, expert assessment would be needed to determine the capacity of the soils at the Smyth-Fernwald site to be transformed from the existing annual grasses to sufficiently homogeneous and fertile soils capable of being tilled. For either option, similar assessments would be needed for portions of the Gill Tract south of the creek and the available level space at the UC Botanical Garden.

Vini Bhargava, Director of Physical and Environmental Planning, has noted that her office can assist in the consultant hiring and the subsequent study when resources (including funding), stakeholders to be involved, and a scope of work have all been identified. Members of the Oxford Tract Planning Committee would like to work with the consultants who are hired to perform the options analyses. This is important to ensure that future anticipated instructional and research needs for all of the organizations listed on Page 3 will be met.

There are claims that the land where the Oxford Tract is located was given to the university as a bequest to be used only for agricultural research, and that using it for other purposes would jeopardize the land-grant university status of UC Berkeley. This mandate was cited by the Secretary of Regents in 1948, when the Regents decided against a development on Oxford Tract, stating that “the Oxford Tract represents the minimum amount of land for outdoor laboratory purposes convenient to indoor laboratories and classrooms which will permit the University of California College of Agriculture to carry on advanced instruction and research in agriculture on the Berkeley campus.” [“Agricultural Lands - Berkeley, Davis, Los Angeles”. The Office of the President. March 29, 1950.] This issue was raised by Prof. Miguel Altieri in a document distributed at a SOGA meeting in Morgan Hall on November 14, 2017 and then stated separately in an e-mail message to OTPC member Peggy Lemaux from Susan Rutherford, Ph.D. 1987, who received her degree from CNR and was also a lecturer for 25 years, “It was always my understanding that the Oxford Tract was a restricted bequest to the University that it was always to be used for agriculture.” **The legality of these claims needs to be investigated by legal counsel as soon as possible.**

Only after the expert analyses have been completed and accurate cost estimates have been made can an informed decision be made regarding any plan for development. It will then be critical to establish a timeline for the conversion of the Oxford Tract, to inform decisions regarding deferred and preventive maintenance of the existing OTRF buildings. The Insectary, North, and South greenhouses are 15, 25, and 55 years old, respectively; substantial investments will be needed in order to maintain their functionality for the interim (and afterwards if they are to remain). Therefore, we recommend that the university move forward with planning for the hiring of outside expert consultants this semester, so that the necessary assessments can be completed

to enable decisions to be made regarding the optimal, responsible, and legal usage of the Oxford Tract by the end of the coming academic year (ending in 2019).

In closing we affirm our support for maintaining all of the current functions at the Oxford Tract as well as the development of affordable housing for Berkeley students. We are pleased to see that both undergraduate and graduate students, as well as the Berkeley Student Cooperative (BSC), are represented in the Housing Master Plan Advisory Group to help ensure that any new residences built on the Oxford Tract will actually increase student access to affordable housing. We encourage the campus leadership to work in partnership with the BSC and other local affordable housing initiatives toward more cost-efficient building design and residential program operation. We would also like to note that this report was written without the benefit of broader input from the local community, because Ruben Lizardo (Director, Local Government and Community Relations) recommended public discussion of the Oxford Tract as part of a larger community input session on student housing (cf. Appendix H, 6/23/2017 meeting summary notes). We strongly encourage that public discussion.