

STANFORD  
UNIVERSITY



LARRY HORTON  
*Senior Associate Vice President  
Director of Government and  
Community Relations*

May 27, 2008

Mr. Pete Kutras  
Santa Clara County Executive  
70 West Hedding Street  
San Jose, CA 95110

Dear Mr. Kutras:

After a series of discussions between members of the County staff responsible for County facilities and engineering faculty from Stanford with expertise in facilities and in energy efficiency, Stanford is pleased to offer a collaboration between Stanford and the County on a project to retrofit a major County facility to improve energy efficiency and to do so using modeling and measurement tools that will permit serious research.

If successful, this collaboration will contribute to the state of knowledge about achieving energy efficiency and about reducing greenhouse gases.

This basic collaboration will involve a County project for retrofitting a major County facility and a research component conducted by Stanford faculty and students. The County will be in full control of the retrofitting project, but a Stanford team will advise the County on elements of the retrofitting. Stanford will have full responsibility for the research component, but the County will be fully apprised of the research steps and will assist in collecting data.

To contribute to the success of this project, Stanford is offering to pay up to \$1 million to support the retrofitting, and the Stanford University Precourt Institute for Energy Efficiency will support the costs of the research component.

The County has selected the Main Jail as the project building for retrofitting and research. The attached agreement has been prepared with the participation of the Stanford research team and County facilities management. The agreement spells out the responsibilities of Stanford and the County in the collaboration, and it provides the payment mechanism for Stanford's contribution of one million dollars to the County.

Stanford has already signed this agreement. If the County executes the agreement, the collaboration will be carried out as agreed to by both parties.

Sincerely,

A handwritten signature in black ink that reads "Larry Horton".

Larry Horton

cc: Larry Jinkins, Caroline Judy, Robert Reidy

Office of Public Affairs  
Government and Community Relations

# Agreement Establishing Energy Efficiency Research Collaboration between the County of Santa Clara (“County”) and Stanford University (“Stanford”)

## **Overview**

This will serve as an Agreement between Santa Clara County and Stanford University regarding a joint Energy Efficiency Research Collaboration. Stanford will provide expertise and advice on retrofit measures for the Main Jail North, and fund up to one million dollars towards the resulting retrofit project (“Project”). The County will work with Stanford and permit Stanford researchers reasonable access to Main Jail North and provide data about Main Jail North’s energy efficiency both prior to and after the retrofit so that Stanford researchers can perform data analysis, and prepare reports and publications regarding this effort. The Stanford researchers agree to comply with the County’s requirements regarding security, access and confidentiality of information as set forth below.

## **Research Purpose**

To reduce the impact of the rising energy costs of buildings on the County budget and to help reduce greenhouse gas emissions from County facilities, this collaboration aims to develop and implement a building modeling, simulation, and evaluation method to determine cost-effective energy efficiency retrofit measures for a building. The Main Jail North (“Building”) will serve as the case study in this collaboration. The hope is that the Project will obtain results quickly, and then the County will be able to generalize these applications to other County buildings.

## **Stanford Research Team and County Project Team**

Stanford has faculty and students participating in this effort, including lead researcher Martin Fischer from the Department of Civil and Environmental Engineering. Support of the research will be provided by James Sweeney, Precourt Institute Director and from the Department of Management Science and Engineering. The County Project Team consists of Caroline Judy, Jeff Draper and Lin Ortega. Team members from both parties may be substituted based on the reasonable needs of the parties.

## **Research Proposal**

This case study consists of the following six major steps:

1. Extend and track measurements of Building and energy performance. Stanford will recommend upgrades to the current building control system, including additional sensors needed, so that the energy performance of the Building can be assessed to the extent and level of detail needed to propose a well-founded set of energy efficiency measures, Stanford will assess existing Building conditions relating to energy use to understand the performance of the building.

2. Create energy simulation model. With the information gathered in the first step, Stanford will then create an energy simulation model that reflects the Building's current energy consumption and use patterns, as accurately as possible.

3. Perform data analysis, including simulation of retrofit options. Stanford will use the energy simulation model to detect operational inefficiencies and to predict the impact of retrofit measures for energy consumption and thermal comfort.

4. Recommend retrofit options. Stanford will present a written report to the County including various retrofit options and the likely feasibility of these options to reduce energy consumption. Stanford will present the recommendations to the County, and the County will discuss the recommendations with the Stanford research team. The County will select retrofit measures based on the County's analysis of the predicted savings potential and involved costs.

5. Implement retrofit measures. The County will design, permit, construct, and commission retrofit measures. The Stanford research team will be updated at major milestones, but at least quarterly, on the progress of this work.

6. Verify savings. The Stanford research team will document the retrofitted performance with gathered post retrofit measurement data, using simulation models. Data will be sampled over a 2 year period.

### **Stanford Research Commitments**

Stanford will:

1. identify building performance data that the County will collect to support the research collaboration;
2. propose methods to measure these data;
3. develop a 3D building information model to support the energy simulation of the building;
4. carry out the necessary building energy simulations;
5. propose retrofit options on the basis of building energy simulations;
6. devise and carry out a plan to validate the improved building performance after the retrofits; and
7. provide report with specific results about Building efficiency to the County with generalized recommendations for effective steps to take when retrofitting other County buildings.

### **County Commitments**

In consideration of Stanford's support of the Project, the County will:

1. work with the Stanford to determine and install the necessary measurement devices; (The current Building control system must be

replaced or upgraded and sensors added or replaced for the proper efficiency management of the Building, and in order for the County and Stanford to evaluate the ongoing performance of the Building's energy system. Stanford will recommend to the County necessary changes to the Building control system (including sensors), and Stanford will work with the County to confirm that the devices are installed correctly, function properly and collect the necessary data for the research project. The cost for this upgraded or replaced control system will be covered by the County and may be covered out of the million dollar grant from Stanford; the County's costs for the upgraded control system and sensors will not exceed \$100,000. In addition to the sensors necessary for the proper maintenance of the Building, Stanford researchers may request that additional sensors be installed for primarily research purposes; Stanford will directly cover the costs of such additional sensors out of its own research budget.);

2. collect and share the necessary data (e.g., as-built drawings, building performance data such as temperatures in spaces over time, energy consumption by the various building systems, building occupancy, etc.); In order to protect the security of the Main Jail facility as-built drawings will be restricted for use by only the identified Stanford Research team and is not to be reproduced, distributed or otherwise publically disseminated or published; nothing in this provision, however, will limit Stanford's ability to publish the energy efficiency results of the research project, provided that the County will have 30 days to review publications to confirm that restricted data will not be released;
3. in a mutually agreeable time frame, but no later than 24 months after the execution of this Agreement, Stanford will identify retrofit recommendations and the County will select and initiate the Project from these recommendations. For the purposes of this section, County initiation of the Project means County commitment with any third party for services in connection with the Project. The County must initiate, but not necessarily complete the Project, within this 24 month period; and
4. for a minimum of 2 years after the completion of the retrofit of the Building, collect data about the performance of the Building and make the data available to the Stanford research team.

### **Stanford Funding Commitment**

Stanford will fund up to one million dollars (\$1,000,000) towards the Project as follows. The County will provide Stanford with a draft agreement for some aspect of Project implementation prior to County execution for Stanford's reasonable review and approval. Stanford will then advance funds in that contract amount (equal to the executed contract) and the County will pay the vendor as required. Stanford's review and approval of the draft agreement is limited to determination whether the proposed contract is a retrofit expense and part of the recommended retrofit measures ("Validated Contract



Expense”). Stanford will have 30 days to undertake the review and will provide payment in a timely manner; Stanford will work with the County to expedite timing, if possible, and where requested by the County. The County will provide proof of payment of all advanced funds to Validated Contract Expenses. Stanford will not pay vendors or contractors directly.

The County will pay for all Project expenses above one million dollars. In the event the retrofit of the Building is less than one million dollars, Stanford will make the remaining money available to the County, under the same reimbursement terms described above, for mutually agreeable energy efficiency retrofitting projects of other County buildings, up to 24 months following execution of this Agreement.

### **Access and Confidential Information**

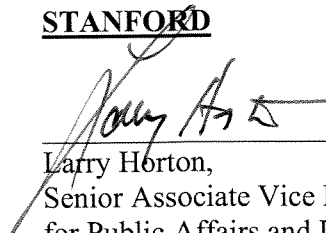
Stanford’s assigned research team will limit access to County provided as-built drawings. These as-built drawings must be considered confidential documents with access restricted to “need-to-know” identified Project team members. Stanford will adopt and ensure proper procedures are followed regarding the handling of confidential as-built drawings. Except as expressly permitted by the County, Stanford will not allow duplication, reproduction, dissemination or publication of the confidential as-built drawings by any party. At the conclusion of the Project, the as-built drawings will be returned to the County.

### **Other Terms**

Stanford will provide advice and guidance to the County based on currently available information. The County acknowledges that Stanford is not in a position to guarantee energy efficiency results for this project.

Intending to be bound to this Agreement Establishing Energy Efficiency Research Collaboration between the County and Stanford, the parties accept this Agreement.

**STANFORD**

  
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Larry Horton,  
Senior Associate Vice President  
for Public Affairs and Director,  
Government and Community Relations

  
\_\_\_\_\_  
Date

**COUNTY OF SANTA CLARA**

\_\_\_\_\_  
PETE McHUGH, Chair  
Board of Supervisors


\_\_\_\_\_  
Date

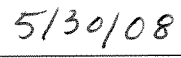
ATTEST:

\_\_\_\_\_  
PHYLLIS A. PEREZ  
Clerk of the Board of Supervisors

\_\_\_\_\_  
Date

APPROVED AS TO FORM AND LEGALITY:

  
\_\_\_\_\_  
KATHERINE HARASZ  
Deputy County Counsel

  
\_\_\_\_\_  
Date

