

## **RESPONSES TO ARTHUR KELLER'S QUESTIONS ON GREEN BUILDING:**

1. What trademarks and copyrights apply to the LEED name and LEED checklist? To what extent is the City legally allowed to use the LEED name and checklist without requiring certification?

Response: That is a legal question and has been referred to the City Attorney for response at the meeting. On the one hand, many cities have now adopted LEED criteria and support materials. On the other, however, they may not consider a building as LEED certified without the documentation from the U.S. Green Building Council.

2. To what extent does provisioning of the building affect how well the green measures work? To what extent does the LEED certification process ensure proper provisioning of the building?

Response: Assuming that "provisioning" primarily refers to commissioning the building with regards to the energy savings anticipated, it is staff's understanding that the LEED certification does a good job to ensure proper provisioning, albeit at a high cost in time and dollars. Very extensive documentation is required to be produced by specialized consultants to demonstrate compliance.

3. With respect to Attachment C (hardship or infeasibility exemption), for a project that does not require City Council approval, is there an appeal process in the case of denial? For historic preservation-related conflicts, should the HRB review and agree that an unavoidable conflict does exist? To what extent may the applicant claim financial hardship as a reason, or should this reason be explicitly disallowed, except with respect to public facilities?

Response: An appeal process to the Council is intended and will be added to the ordinance. HRB review of exemptions for "historic" properties could be included, but less to determine that there is an "unavoidable conflict" than to verify that the historic resource is critical and would be adversely affected by denial of the exemption. The exemption language allows requests "not limited to" those listed, so financial hardship could be a reason. Whether to disallow such a request on that basis is a policy issue for the Commission and Council (some of the financial reasoning could also fall under categories (2) through (5) in the list). Affordable housing projects could also have a unique perspective on this issue.

4. Please provide copies of model ordinances or ordinances or regulations adopted by other cities.

Response: We have copies of ordinances from the cities of Rohnert Park, Albany, and West Hollywood, and Pleasanton as examples. We will try to get them to the Commission at the meeting, but may need to follow up with those. We are prepared to discuss the differences between them and what is proposed (there is little difference).

5. Should mixed use developments satisfy the non-residential requirements for the non-residential portion, and the residential requirements for the residential portion?

Response: That is staff's intention and we will note that on the tables. There should be flexibility, however, to use one or the other approach, as the nonresidential or residential portions may be relatively insignificant with respect to the entire project in some cases. Also, both LEED and GreenPoint Rated are looking at this issue and may have suggestions soon.

6. Please provide historical figures on number of residential demolitions, annually for each of the last 10 years or so (depending on how far you can go back). Assuming we have the data, please provide breakdowns by size of floor area of existing building.

Response: We will attempt to derive the total number if readily accessible, but do not have a breakdown on the size of homes.

7. With respect to the number of new single family residences, please provide breakdowns by size of floor

area and by size of basement (in ranges). At a minimum, please indicate how many of the 132 permits for new SFR buildings include basements.

Response: Over the past 4 years, approximately 30% of new homes included basements. Staff does not have the floor areas readily available.

8. Attachment A refers to LEED-accredited architect letter, while Attachment D refers to LEED-certified. Please explain the discrepancy.

Response: Attachment D is not the current proposal, but was presented a year ago as a concept for proceeding with the ordinance. In fact, "LEED-accredited professional" (does not necessarily have to be an architect, but usually is) is the correct term. "LEED-certified" is for the building, "LEED-accredited" is for the person.

9. Should some or all projects be subject to a no-net increase in energy and/or a no-net increase in water use?

Response: To limit projects in this way would, according to the City Attorney, require amendments to the locally-adopted version of the State Energy Code. The City has retained a consultant who has prepared such amendments for other cities and staff expects such amendments over the course of the coming year, in conjunction with the State update of the Energy Code.

10. How should the rules, when adopted, affect projects for which some application or plans have already been submitted? What about projects under consideration when the requirements increase?

Response: This is a policy determination for the Commission and Council. Staff believes that it would be appropriate to exempt projects that have pending development applications on file, with the exception of Preliminary ARB review or pre-screening for Planned Community applications. Also, projects in the process requiring legislative actions, such as PCs or zone/Comp Plan changes, should be evaluated as part of that review process to determine the extent of green building compliance.

11. To what extent should zoning ordinances incentivize remodeling and additions over demolitions and new construction?

Response: That is a policy determination for the Commission and Council. There are advantages to reuse of buildings that is balanced by the sometimes exorbitant cost of reuse/repair/remodel, as well as a property owner's expectations to develop a site. The City's zoning already includes some incentives in the form of HIEs and historic protection provisions.

12. Please illustrate scenarios in which DEE's are related to sustainable design elements.

Response: The categories of exceptions could include height and daylight plane -- such as PV panels or solar heating for water that encroach into a daylight plane. Another DEE category could be related to parking facilities -- reducing the aisle width or parking stall dimensions to provide additional shade trees or landscaping or bioswales, for instance. The ARB supported including in the allowable parking space adjustments (rather than via a DEE) approved by the Director, a parking space reduction for a greener project. Another possibility to look at is the covered parking space -- which is required for one of the two spaces for a single family residence and counts toward maximum FAR -- could be allowed via DEE to be uncovered (so the FAR could go toward the house, a big incentive) if the home were a certain number of points greener than the mandatory as certified by a green point rater.

13. Table A has two rows that apply for new construction between 500 sf and 1000 sf (pro-rated points and no requirement).

Response: The last row should be "New construction <500 sf..." Thank you.

14. For non-residential construction, should the requirement for certification and higher LEED levels apply at thresholds for larger non-residential construction projects than 5,000 sf?

Response: This is a policy determination for the Commission and Council.

15. Please explain the implication of basement construction dewatering for the ability to draw well water for emergency water supplies.

Response: This is not germane to the green building ordinance.

16. Basements are currently prohibited in flood zones, and allowed just outside them. Should there be a threshold distance from a flood zone or a stricter ground height requirement in order to allow a basement to be constructed?

Response: This is not germane to the green building ordinance.

17. To what extent do basements include sump pumps for removing water following construction, and is the water sent to the storm drain or sewer system?

Response: This is not germane to the green building ordinance.

18. Is staff tracking efforts by Build It Green to provide GreenPoint ratings for residential developments that undergo LEED certification, and to provide a tool to calculate the greenhouse gas implications of the specific green measures chosen?

Response: Yes, but there is not much information yet.

19. Please estimate the costs of the LEED certification process for a LEED building (not the measures, but just the certification process) and for GreenPoint rating. Please compare the costs of this certification with the typical cost for architect fees as a percentage of project budget.

Response: Staff doesn't have that information, but perhaps some architects or in the audience can share their LEED experiences with the Commission.

20. Please provide data regarding the two PTOD projects submitted (project location, existing building size, amount of retail and residential sf in new construction, number of residential units, range of residential unit sizes) mentioned on page 5 of the Staff Report.

Response: Staff can provide this information offline, but it is not germane to the green building ordinance.

21. Why does the Development Center page on the City website only list one month's worth of detail data of New Planning Applications and one month's worth of summary data of Building Permit Activity?

Response: Staff can review this issue and respond later, but it is not germane to the green building ordinance.

## **RESPONSES TO KAREN HOLMAN'S QUESTIONS ON GREEN BUILDING:**

1. Size of homes is mentioned (page 2, 4 staff report): what consideration was given to limiting, penalizing, or charging for larger homes?

Response: There was no consideration given for outright limiting, penalizing or charging for larger homes. The size of a home does not necessarily drive its carbon impact, depending on the size of the site, other features protected, and the size of the family occupying the home. The green building rating system (GreenPoint Rated) does not directly address size of home, but staff did consider whether a larger home should be required to attain a greater number of points in the checklist, since there is likely to be some more flexibility in achieving some of the green points for a larger home than a small home. Staff is aware of at least one city that has required homes to meet the same energy consumption level as a threshold home (e.g., 3,000 square feet), but the City Attorney indicates that we may not do so without amending the State's energy code as it applies to Palo Alto (that process is under study).

2. Why is basement area not paying development impact fees as it is typically living space and contributes to wear and tear on our infrastructure? (page 4 staff report)

Response: School impact fees are calculated by square footage and do include residential basement areas in that area. The other development impact fees (parks, community facilities, libraries, citywide traffic) are calculated per residential UNIT, not per square foot. Staff report page 4 referenced "development impact fees" as not applicable to residential basement square footage. The sentence intent was that, although residential basements are not included in planning's definition of "gross floor area," a greenbuilding threshold could still include the basement area. Commercial basement floor area is included in Development Impact Fees because those fees are calculated based on gross floor area square footage.

3) Page 3 staff report, City is funding an "ask the expert" program....does not state the qualifications of such a person...what would they be?

Would this person be trained in historic preservation? Will owners of historic or older homes be referred to historic professional? Exemptions for historic are listed but will these issues be lost if not listed in basic considerations?

Response: The "Ask an Expert" service is provided by the Build It Green organization, under contract with Utilities (as it is available to PG&E customers through that utility). It provides a resource for Green Building information such as what are green building materials, where to buy them, and how to find a green building professional. "Ask an Expert" is not oriented to historic preservation but are experts in green building. Staff will continue to refer owners of historic homes to the City's historic preservation officer regarding those issues, but will make the "Ask an Expert" service available for green building assistance as well.

4) Page 3 staff report, Council adopting attached tables by resolution allows for periodic amendments by resolution....what is benefit or drawback to this? Why not by ordinance? Why this proposal?

Response: Staff expects that the LEED, GreenPoint Rated, and other emerging systems are going to be continually evolving, and amending these criteria by resolution to keep up with those changes is more expeditious than a zoning ordinance amendment, which requires initiation, Commission and Council review (and we would want ARB review in some cases as well). This seems to be a process other cities are using as well to allow for periodic changes. The disadvantage is a slightly lesser level of review and input, but it would in most cases still involve ARB review and Council hearing and action. The Commission could be added to that process, but we believe most of these kinds of changes will be more technical in nature and less policy driven. If something has more important policy sensitivity, staff could refer it to the Commission or the Council could direct it to Commission for review.

5) Page 4 staff report....There have been 3 meetings stakeholders....please identify who constitutes this group. Later it is stated meetings with the public will be held after the PTC study session. Does this mean there have not been meetings with public as of yet?

Response: There have been no meetings of the general public to date (though ARB, P&TC, and Council meetings have been advertised). Meetings are now scheduled for March 25th and April 3rd, prior to the Commission's meeting on April 9th. The meetings held to date have been with 6-8 commercial architects and a handful of residential architects who practice regularly in Palo Alto and who have some knowledge of green building criteria and the relevant checklists. The purpose of these meetings has been to identify potential implementation barriers in terms of the technical and cost implications of compliance with the checklists.

6) Why is multifamily and single/two family charged with complying with the same number of points?

Response: While the minimum points for certification are the same, the checklists are different. Some items are the same, but many are different and are directed towards multi-family rather than single-family construction.

7) Incentives: please provide links or samples to the incentives of cities referenced in time for review prior to meeting.

Response: A table of samples of incentives from other cities was e-mailed to the Commissioners and is attached to this memo.

Austin's Program:

<http://www.austinenergy.com/Energy%20Efficiency/Programs/Green%20Building/index.htm>

Boulder's Program:

[http://www.bouldercolorado.gov/index.php?option=com\\_content&task=view&id=208&Itemid=489](http://www.bouldercolorado.gov/index.php?option=com_content&task=view&id=208&Itemid=489)

Seattle's Program: [http://www.seattle.gov/light/conserves/business/cv5\\_ncp.htm](http://www.seattle.gov/light/conserves/business/cv5_ncp.htm)

Anaheim's Program: <http://www.anaheim.net/section.asp?id=162>

Booklet for AIA titled "Local Leaders in Sustainability: A Study of Green Building Programs in our Nation's Communities": [http://www.aia.org/SiteObjects/files/LLinSustain\(full\)\\_final.pdf](http://www.aia.org/SiteObjects/files/LLinSustain(full)_final.pdf)

Also, Portland: <http://www.portlandonline.com/osd/index.cfm?c=41481>

8) Mixed use: why is this not included as part the green building program?

Response: Mixed use is included as part of the green building program, but the checklist and points are not specified in the tables. It is staff's intent that generally the commercial portion of a mixed use project should comply with the LEED requirements of Table A and the residential portion should comply with the GreenPoint Rated requirements of Table B. We could add that to the tables, but with the caveat that there may be flexibility to look at some of the projects entirely under one or another of the rating systems (both are developing that approach).

9) From tables: will the project architect or team member be allowed to submit accreditation letter for project compliance?

Response: Staff's initial proposal is yes, the project architect or team member may be the LEED-accredited professional certifying compliance with the checklist criteria. For GreenPoint Rated projects, that would not generally be allowed, though it might be if there aren't third party GreenPoint Raters available to take on the work. The primary reason for this on the LEED side is the very extensive cost and time required to determine certification (as in years rather than months). The cost and time are likely to be reduced as the systems become more familiar, but at the outset a self-certification does not seem unreasonable (ARB supported this approach at its March 6 meeting).

10) Thresholds are referenced as both 1000 sq ft and 1500 sq ft on table and in staff report. Which is intended?

Response: The most recent tables (A and B) refer to 1,000 square feet. The proposed threshold was lowered since last April's proposal of 1,500 square feet, which is no longer proposed.

11) What are the consideration to allow DEE's as incentives for conformance?

Response: The considerations could include how well the feature contributes to sustainability. The categories of exceptions could include height and daylight plane - - such as PV panels or solar water heating panels that encroach into a daylight plane. Another DEE category could be related to parking facilities - reducing the aisle width or parking stall dimensions to provide additional shade trees or landscaping or bioswales, for instance. The ARB suggested including in the allowable parking space adjustments (rather than via a DEE), to be approved by the Director, a parking space reduction for a greener project. Another possibility to look at is the covered parking space -which is required for one of the two spaces for a single family residence and counts toward maximum FAR - could be allowed via DEE to be uncovered (so the FAR could go toward the house, a big incentive) if the home were a certain number of points greener than the mandatory as certified by a green point rater. There are not many opportunities for planning or zoning incentives in terms of green building. Design enhancement exceptions (DEEs) may be one possibility to allow flexibility in design for minimal encroachments into setbacks or daylight planes, or maybe even height, within some parameters, so long as it was found that the DEE would not adversely affect a neighboring property or the public. These would not be granted as a matter of course, but would be only for very high achieving projects, e.g., those that agree to the LEED certification process to validate a Silver or above rating or multi-family projects with GreenPoint Rated points in excess of 150 points (as an example).

12) Can staff please provide an update of the salvage program (as opposed to recycling) of the C&D ordinance?

Response: Staff is working to create an additional web page that would function as a "Materials Exchange" resource for residents of Palo Alto. It would work like this: any demolition job that is going to be doing salvage would provide a list of materials they plan on salvaging. These materials would get posted on the web page therefore making them available to any interested party. The web page would act as a marketing tool for the program as well. Jason Nortz, our C&D coordinator, is meeting with our staff administrator tomorrow to get this web page started. Staff is in the process of updating C&D Application forms to include an additional page for Salvage only. The salvage page would include a list of all local salvage facilities, and a list of typical items that can be salvaged. Staff is also working with the Building Dept. to create a "deconstruction" type of permit. This permit would allow the applicant to begin any type of deconstruction work on a house without having to wait on a demo or building permit. Jason has already talked with Building about this and is attending the Building Dept. staff meeting this week to talk more about it. Staff is seeing more popularity with salvage and deconstruction as Build it Green and LEED requirements become mandatory. If the City is able to incentivize the demo process to encourage salvage, participation rates will definitely increase. Also, as part of the new green building requirements applicants will achieve more points if they do salvage in addition to recycling.

13) Can staff please provide the Palo Alto waste stream characterization for Commissioners and the public? Annette P and Russ R in Public Works would have ready access. There are two pie charts that are particularly informative.

Response: The waste characterization study from the Zero Waste Operation Plan was provided to all Commissioners.

14) Understanding that it is simpler to utilize an existing "green program" would it be feasible to tailor a program to better recognize the environmental advantages of adaptive reuse? Was that considered?

Response: There is an inherent advantage and recognition to adaptive reuse in that in most cases the threshold for "new construction" would be avoided, so that the checklist compliance would be avoided altogether or lowered considerably by using a "commercial interiors" or "existing building" checklist. For the LEED "new construction" and "core and shell" checklists, 3 of the necessary points are available specifically for building reuse. Additional points may also be achieved for "innovation in design," which could include further points for reuse.

15) How many of the major remodels and new home construction involved new basements?

Response: Over the past 4 years, approximately 30% of new homes included basements.

16) Were local or global carbon footprint or both considered when evaluating a "green" program?

Response: Both local and regional/state/national/global carbon footprints were considered in establishing Palo Alto's Climate Protection Plan, its "green program." The green building criteria presented here are only a small portion of the overall City effort, which also includes addressing the City government's operational and facilities policies, a wide variety of planning and transportation efforts, and public education and communications. Regarding the specifics of the green building program, the U.S. Department of Energy estimates that the energy and water usage of buildings accounts for approximately 40% of carbon emissions nationally. For Palo Alto, the Climate Protection Plan indicated that a similar percentage of the community's emissions come from energy usage other than for transportation purposes. Another 8-14% of the community's emissions result from landfilling and/or disposal of recyclable materials, some of which relates to construction of buildings.

17) Were concrete production pollutants considered?

<http://www.iht.com/articles/2007/10/21/business/cement.php>

Response: Concrete production pollutants are not specifically considered in the green building criteria, but are factored into the energy and resource use associated with building construction and is addressed to some extent by the construction & demolition program and in the green building checklists (points for reuse, C&D, and for using flyash in concrete).

18) Was the impact of basement construction, in particular dewatering, storm water runoff, impact on trees, and adjacent properties considered? Many articles on subsidence, aquifer compaction, Santa Clara County history, wells, transport of water to recharge areas. Given the proliferation of basements in PA, what consideration or reconsideration was given to evaluating the situation?

Response: The issue of basements related to construction impacts (and longer term impacts) has been looked at several times in the past few years. The City commissioned a study by an environmental firm that concluded that there were not any significant groundwater impacts from basements, and the Public Works Department has revised its guidelines and requirements to prohibit pumping of groundwater during construction and later. The City has regulations to protect trees from the impacts of basements as well. Relative to green building criteria, basements were discussed as something that could be included in size calculations if thresholds were established based on house size.

19) On average how many gallons of water are pumped off a construction site prior to basement construction? Min/max reported?

Response: This information is not readily available.

20) What is the thickness of concrete walls required for basement construction? How many tons of concrete is required per basement sq ft construction?

Response: This information will be provided prior to the follow up study session.

21) Did the Council adopt or not the proposal to charge street impact fees to basement developers?

Response: No, they did not accept staff's recommendation to charge such fees.