Sustainability Assessment for the Preservation of The Town and Country Center

174 North Palm Canyon Drive
Palm Springs, CA 92262

Prepared for:

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Prepared by:

Eric Shamp, AIA, NCARB, LEED AP
Principal
Ecotype Consulting
10 E. Vine Street, Suite 212A
Redlands, CA 92373
T: [909] 307-8987
F: [909] 307-8922
eric@ecotypeconsulting.com

ecotypeconsulting

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1. INTRODUCTION

The Palm Springs Preservation Foundation recently asked Ecotype Consulting to prepare this report to analyze the sustainability of preserving and reusing the historic Town and Country Center (T&CC), located at 174 North Palm Canyon Drive. I was honored to perform the work, and truly enjoyed getting familiar with a hidden Palm Springs landmark that I had been previously unaware of.

The concept of sustainability has become politically abused and somewhat diluted through poor marketing. In this study, I attempt to clarify its meaning, so that the reader can better understand its relevance to the T&CC. Sustainability (or, more commonly, "greenness") is not an absolute condition; it can only be assessed in a comparative manner against an alternative. In other words, it is impossible to declare that a project is sustainable or not sustainable; we can only assess a project relative to something else, such as the well-known LEED rating system or another project alternative. In the case of the Town and Country Center, the obvious alternative project is the plan that threatens its demolition, the Wessman Development Concept Plan.

Although sustainability is generally considered to be the nexus between ecological, economic, and cultural concerns, it is beyond the scope of this study to compare the economic and cultural aspects of the T&CC and its alternative. The cultural relevance of the T&CC has been addressed in numerous documents and publications, most recently in the Historic Site Nomination for The Center, prepared by the Palm Springs Preservation Foundation in April 2009. The economic relevance of the T&CC has presumably been investigated by Wessman Development and the Palm Springs Community and Economic Development Department. This document is intended to serve as a counterpart, rather than a counter*point*, to those analyses, in order to provide City decision-makers and private investors with a comprehensive picture of the relative sustainability of the project.

In regards to *ecological* sustainability, this study will clearly demonstrate that preservation of the Town and Country Center is the superior choice by the metrics and/or principles of embodied energy conservation, the LEED rating system, transportation planning, and the City's own established goals for sustainability. It is my sincere hope that these results will be considered and given the same weight as the economic and cultural considerations for whichever project is ultimately implemented.

Eric R. Shamp, AIA, NCARB, LEED AP
Principal, Ecotype Consulting
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2. SUSTAINABILITY AND HISTORIC PRESERVATION

2.1 Definition of sustainability

Sustainable development can best be described using a definition developed by the UN World Commission on the Environment in 1987: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"[1]. This definition is quite broad in its application, with no specific reference to any category or aspect of conservation. In common practice, however, this definition is generally understood by the progressive business and development community to apply to a continuity of economic, ecological, and cultural conditions that support human society.

These economic, ecological, and cultural conditions are known collectively as the "triple bottom line"[2] of sustainable development. In order to produce the most sustainable outcome from any development project, all three conditions are to be given equal consideration. The "triple bottom line" concept distinguishes traditional economic development from *sustainable* economic development. The Desert Fashion Plaza is an obvious example of economic development that was not, in fact, sustainable.

In this report, we will investigate the impact on the Town and Country Center (T&CC) site of two proposed development schemes and assess how well each scheme addresses the sustainability "triple bottom line". The first scheme is based on the March 2011 Desert Fashion Plaza Community Concept Plan "Preferred Concept Plan" (the "Preservation Scheme"). The second scheme is based on the May 2011 Wessman Development Desert Fashion Plaza Concept Plan (the "Wessman Scheme").

2.2 Sustainability efforts in Palm Springs

The City of Palm Springs has demonstrated a remarkable commitment towards sustainability by establishing an Office of Sustainability, initiating a Sustainability Commission, and joining the International Coalition of Local Environmental Initiatives (ICLEI). In the 2007 General Plan, the City incorporated the following statement into the Palm Springs Vision:

[1] The World Commission on Environment and Development, *Our Common Future*, (New York: Oxford University Press, 1987), 43.
[2] Originally coined by John Elkington, *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*, (London: New Society Publishers, 1998).

We enhance our natural, cultural, and historical resources with sustainable economic growth and high style.[3]

Chapter Three of the *Palm Springs Path to a Sustainable Community*[4] addresses "Sustainable Urban Development and Transportation Choice". It describes three objectives:

1. **Increase the number of green buildings.**
2. **Promote smart growth and transportation choice.**
3. **Promote alternative, sustainable transportation options and infrastructure using alternative modes, fuels, and vehicles.**

Chapter Seven of the *Palm Springs Path to a Sustainable Community* addresses "waste". It describes the following objective:

1. **Reduce waste and increase recycling for all segments of the community.**

Later in this report, we will assess how well each of the two schemes aligns with each of the objectives of the *Palm Springs Path to a Sustainable Community.*

2.3 Nexus between sustainability and historic preservation

There is a significant alignment between the movement to preserve historic structures and sustainable development. The construction of a new building represents a significant economic investment in material and energy resources, along with ecological impacts associated with raw material extraction, manufacturing, transportation, fossil fuel extraction, and fuel consumption. The demolition of an existing building (whether historic or not) results in a total loss of those economic and ecological resources, and further compounds the ecological impacts of a construction project.

Washington DC architect Carl Elefante, FAIA, LEED AP describes building reuse thus, "The greenest building is the one that's already built." According to one study[5], 39% of the total energy consumption over the life span of a typical building is embodied in its materials. By retaining an existing building, the embodied energy is amortized over a greater time span, dramatically reducing the size of the building's ecological footprint.

[3] Palm Springs General Plan, 2007.
[4] Draft March 17, 2009.
[5] Mike Jackson, "Embodied Energy and Historic Preservation: A Needed Reassessment", Journal of Preservation Technology 36:4, (2005).

Historic structures tend to be especially good candidates for rehabilitation as "green" buildings. In contrast with the majority of contemporary buildings, historic buildings are usually designed for passive thermal comfort, are built using more durable materials and construction techniques, and are sited in a way that prioritizes pedestrian access over vehicular traffic. With a few discrete improvements to a historic building's exterior envelope (blown-in insulation, thermally-efficient windows, cool roofing), a historic building can be made quite energy efficient.

The cultural relevance of the T&CC has already been sufficiently documented, most recently in the Palm Springs Preservation Foundation's *Historic Site Nomination for the Center*[6]. It is not the intent of this report to revisit the case for cultural preservation. However, it is important to note the importance of cultural sustainability in the "triple bottom line" concept of sustainability.

2.4 Types of historic resource reuse and implications for sustainable development

The US Department of the Interior recognizes several standard treatments of historic properties[7]:

> **Preservation.** The standard for historic preservation requires the application of measures intended to "stabilize, consolidate, and conserve" historic features. The property must be used for its original historic purpose, or used in a manner that does not require significant change to the defining characteristics of the building. Only deteriorated or missing portions of the building may be built; no new additions are allowed. This approach would allow some energy efficiency upgrades, as long as they did not disrupt the historic character of the building. This approach may not provide the required design flexibility to make the project economically feasible, and may limit the ability to make energy efficiency and sustainability upgrades.
>
> **Rehabilitation.** In summary, this standard requires that a property be used for its historic purpose, or used in a manner that does not require significant change to the defining characteristics of the building. There shall be no removal or alteration of historic materials, features, or spaces. Deteriorated features are repaired rather than replaced. New additions are allowed, but must be distinguishable from the historic

[6] Patrick McGrew, "Historic Site Nomination for the Center," Palm Springs Preservation Foundation (April 2009).
[7] Kay Weeks and Anne E. Grimmer, The Secretary of the Interior's Standards for the Treatment of Historic Properties, (Washington DC, National Park Service, 1995).

portions of the property. This approach would allow most energy efficiency upgrades, as long as they did not disrupt the historic character of the building. If rehabilitation is performed on a designated historic structure, the owner may be entitled to a 20% rehabilitation tax credit. This approach gives the flexibility to make major repairs, alterations, and/or additions.

Restoration. This is defined as "the act or process of accurately depicting the form, features, and character of a property as it appears at a particular period of time". This approach is typically selected in cases where a historic structure is intended to be used for the demonstration a significant period of time for educational purposes. It is the most restrictive approach, and would not be appropriate to suit the ongoing economic sustainability of the T&CC.

Adaptive Reuse. This approach is not formally recognized by the US Department of the Interior as an official standard for the treatment of historic properties. Adaptive reuse is the process of dramatically changing the historic use of a property, especially after the original use is obsolete. This can often require significant architectural changes, or even the co-opting of a historic structure within a new structure. The original mixed use of the T&CC is as relevant today as it was when the structure was built, so adaptive reuse would not be an appropriate approach.

Earlier this year, the US Department of the Interior published *The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings*[8]. This will be a very useful document in guiding the "green" rehabilitation of the T&CC.

2.5 Green Rehabilitation of the Town and Country Center

The Preservation Scheme is an opportunity for the City to demonstrate the confluence of its goals of mid-century modern preservation and sustainability, and in the process establish a ground-breaking case study for other communities to follow. There are several factors that make the Town & Country Center an ideal candidate for a green building rehabilitation:

[8] Anne E. Grimmer, Jo Ellen Hansley, Liz Petrella, and Audrey T. Tepper, *The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings*, (Washington DC, National Park Service, 2011).

Integrity. Despite some neglect and resultant cosmetic damages, the building appears to be in good restorable condition. There is no apparent structural damage that could be observed from the exterior of the building. Some of its historic features have been obscured, but none lost. Later additions and modifications such as the balcony enclosure, exterior stair canopy, and metal siding are easily removable. Much of the landscaping is still intact. The 1955 E.F. Hutton Building addition appears to be in excellent condition, both interior and exterior. A rehabilitation of the building would require few material resources, when compared to a new construction or the major renovation of a more dilapidated structure.

Simple HVAC upgrades. The heating, ventilating, and air conditioning (HVAC) systems appear to consist of simple rooftop packaged units, likely electric DX cooling and gas furnace. Given the age of the structure, there could be some remaining evaporative cooling (swamp cooler) units. The existing HVAC system would require complete replacement for better maintainability and improved energy efficiency. New HVAC systems known as variable refrigerant flow (VRF) units are becoming more commonplace in Southern California. This type of system would be very appropriate for this mixed-use application. They allow for maximum flexibility, the ability to set separate schedules for different tenant uses, and the ability to efficiently heat and cool different parts of the building at the same time. Rather than relying on large volumes of air to move and remove heat, VRF systems use small lines of refrigerant. Fresh air is provided by unobtrusive direct ventilation methods. VRF systems are very energy efficient, lightweight, and do not necessitate the use of bulky ductwork as do older systems that are based around an air handling unit. Without ductwork, ceilings could be pushed as high as possible, or even left exposed.

Mixed mode passive/active cooling opportunities. Much of the T&CC has a narrow floorplan, making natural air circulation via cross-ventilation a feasible method for passive cooling during certain times of year. The irrigated landscaped courtyard can provide an abundance of moist, cool air which can be drawn into interior spaces adjacent to the courtyard. Near the T&CC, the Corridor (515 North Palm Canyon Drive) employs a similar strategy of passive cooling. The flexibility of a VRF HVAC system (see above) means that individual tenants can elect to operate either active or passive cooling as desired.

Landscaped oasis. The T&CC already possesses that most treasured Palm Spring amenity: a shady, landscaped oasis. With its combination of shade trees, irrigated turf, protection from wind, and high-albedo shaded concrete, this courtyard provides a welcome respite from the heat and an opportunity to comfortably enjoy a bit of nature. While street-adjacent sidewalks can become quite uncomfortable due to the lack of shade and the heat retained by asphalt-paved surfaces, the T&CC courtyard will remain comfortable well into the summer. Again, one can observe a similar condition at The Corridor shopping center.

Mixed-use development. Contemporary urban planners are returning to the old-fashioned idea of mixed-use development as a means for mitigating excessive single-occupancy vehicle traffic, parking requirements, crime, and the inherent economic instability of single-use developments. While the Wessman Scheme does an admirable job of encouraging mixed-use development, it is worth considering that the T&CC is a 70-year-old example of the same development strategy. There is a wide variety of tenant space types, ranging from 600 square foot to 4800 square foot retail, office, hospitality, and residential units. There is the option of creating additional flexibility by building out the planned but unbuilt south side tenant spaces, which could be configured for other uses not currently accommodated in the existing T&CC, while fully enclosing the courtyard. This unbuilt space can be seen on the 1951 site plan shown in the *Historic Site Nomination for the Center*[9].

Satisfies the recommendations of the community. After several community workshops, the City of Palm Springs published the *Desert Fashion Plaza Community Concept Plan*[10] in March 2011. This community input resulted in a list of design objectives and planning elements. These objectives are described below, along with the manner in which the Preservation Scheme responds to those objectives.

Design Objectives and Planning Elements from the Desert Fashion Plaza Community Concept Plan	**Preservation Scheme Response**
Create a unique blend of spaces, uses and activities that reflect the Palm Springs lifestyle and climate.	Courtyard space is unique to the Concept Plan & offers shade and respite. Pedestrian-only connection creates safe, quiet car-free zone.

[9] McGrew, p. 6.
[10] MIG Inc, *Desert Fashion Plaza Community Concept Plan* (City of Palm Springs, March 2011).

Design Objectives and Planning Elements from the Desert Fashion Plaza Community Concept Plan	**Preservation Scheme Response**
Include a diversity and mix of land uses…	Blend of small-scale retail, office, hospitality, and (potentially) residential uses. This is a unique land use, compared to the larger-scale uses planned for the remainder of the Wessman Scheme.
Interface with the adjacent Palm Springs Art Museum…	Main courtyard entry at Palm Canyon Drive is perfectly aligned with PSAM entrance. The T&CC courtyard provides an appropriate terminus to that axis.
Enhance views to the mountains and art museum.	Main courtyard entry will frame views of main axis to PSAM and mountains beyond. Restaurant balcony will provide excellent views as well.
Ensure a walkable and human scale development.	The existing T&CC is not only walkable and human-scaled, it provides respite from the considerable traffic on Palm Canyon and Indian Canyon Drives.
Create a strong east-west connection through the site.	A strong east-west axis that ensures walkable development should have a terminus at both ends. The T&CC serves that purpose on the east. The Wessman Scheme proposes extending the axis through to Indian Canyon Drive, where it terminates against a non-descript parking lot and back door to the Spa Resort Casino. By connecting to Indian Canyon, the east-west axis becomes primarily a vehicle traffic corridor, where walkability is secondary.
Create places to gather including a variety of interconnected open spaces, from large community plazas to small, intimate spaces.	The T&CC courtyard provides a small, intimate outdoor space that is not apparent anywhere else in the Wessman Scheme.
Include "festival" streets, with the ability to close off automobile traffic for special events and activities, such as the Farmer's Market, Art Festival and Village Fest.	The T&CC courtyard is an ideal location for smaller "festival" events, and would not necessitate the closure of streets.
Achieve architectural excellence.	See the PSPF *Historic Site Nomination for the Center*.
Incorporate sustainable and climate responsive building and landscape elements.	See section 2.5 above.
Consider the costs and benefits of maintaining certain existing buildings…	The economic, ecological, and cultural costs of demolition of the T&CC are entirely avoidable.

The Preservation Scheme with an intact Town and Country Center ideally suits the community desires for the Desert Fashion Plaza redevelopment. Demolition of the Town and Country Center is clearly at odds with the Community Concept Plan.

3. EMBODIED ENERGY COMPARISONS

3.1 Definition of embodied energy

Embodied energy is defined as the amount of energy required to extract, manufacture, transport, install, use, decommission, and dispose of a material or an assembly of materials. In 2005, architect Mike Jackson, FAIA, published an article in the *Journal of Preservation Technology*[11] asserting that the ratio of embodied energy to annual operating energy in an existing building ranges from 5:1 to 30:1. In other words, it takes 5 to 30 years of operation to consume the same amount of energy as is embodied in the materials. Considering that most contemporary buildings are constructed with a 25 year lifespan in mind, many new buildings have more energy invested in the materials than in their operation over the entire lifespan.

Furthermore, when we consider that fossil fuels make up 86.4% of the world's primary energy consumption,[12] it becomes apparent that the embodied energy of building materials is a significant source of greenhouse gas (GHG) emissions. According to an analysis[13] of 2009 data from the US Energy Information Administration, buildings consume almost half of all energy produced in the US. Building are by far the biggest single contributor to US GHG emissions.

If we are to seriously address the reduction of GHG emissions, we must prioritize the reduction of energy consumption by the building sector. Using its regulatory powers, the state of California has done an excellent job of reducing GHG emissions related to operational energy consumption in buildings. Embodied energy is as significant a contributor of GHG emissions as operational energy, yet the development industry in California continues to demolish usable and economically feasible buildings with little concern for the ecological and long-term economic impacts.

3.2 Methodology and assumptions

In order to measure and compare the embodied energy between the Preservation Scheme and the Wessman Scheme, we use a method developed by

[11] Jackson, p. 51.
[12] US Energy Information Administration International Energy Statistics, 2007.
[13] Analysis by architect Ed Mazria for Architecture 2030, in which traditional energy data reporting classifications are re-allocated to create a single Building Sector (www.architecture2030.org/the_problem/buildings_problem_why)

the Advisory Council on Historic Preservation[14]. Due to the lack of specifics in the Wessman Scheme, we used the simplest analytical approach, known as the Building Concept Model. This allowed us to estimate embodied energy using only basic information about a building. Results are relatively correct but not precise.

We used the following formulas in our calculations:

Embodied Energy Investment in Existing Buildings

Embodied energy investment	=	Gross floor area of historic building	×	Invested energy per square foot specific to the building type

Demolition Energy for Existing Buildings

Demolition energy	=	Gross floor area of historic building	×	Demolition energy of materials per square foot of construction for buildings of similar size and construction type

Embodied Energy Investment in Renovated Buildings

Embodied energy investment	=	Gross floor area of historic building	×	Invested energy per square foot specific to the building type	×	f_1

Where f1 = fraction of materials and construction of the existing historic building that is being replaced or added in the renovation process. This is largely a matter of professional judgment.

Embodied Energy Investment in New Buildings

Embodied energy investment	=	Gross floor area of new building	×	Invested energy per square foot specific to the building type

Demolition Debris for Existing Buildings

Demolition debris	=	Gross floor area of existing building	×	Demolition debris rate specific to the building type

[14] Advisory Council on Historic Preservation, "Assessing the Energy Conservation Benefits of Historic Preservation: Methods and Examples", January 1979.

Construction and Demolition Debris for Renovated Buildings

$$\text{C\&D debris} = f_1 \times \text{Gross floor area of existing building} \times \left(\text{Demolition debris rate specific to the building type} + \text{Construction debris rate specific to the building type} \right)$$

Construction Debris for New Buildings

$$\text{Construction debris} = \text{Gross floor area of new building} \times \text{Construction debris rate specific to the building type}$$

We used the following assumptions in our calculations:

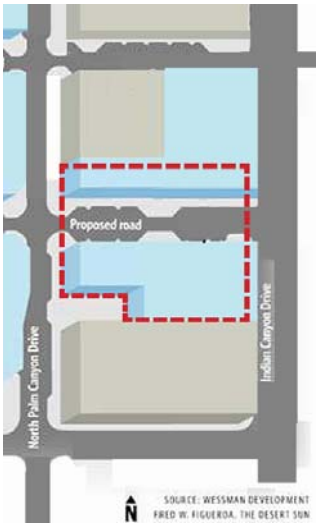
Site Study Boundary

The site study boundary is identical for both the Preservation Scheme and the Wessman Scheme. For this analysis, we are only considering the portion of the Wessman scheme that falls inside the site study boundary. The boundary is overlaid on each scheme below:

Preservation Scheme

Source: Google Earth

Wessman Scheme



Source: Desert Sun

Preservation Scheme Building Assumptions

Characteristic	Assumption	Source
Gross floor area	56,800 sf	Estimated by scaling off floor plans.
Building type	Stores/Restaurants	Based on predominant historic uses.
Invested energy per sf specific to building type	940 MBTU/sf	*Energy Use for Building Construction*[15]
Construction materials	Medium (steel frame)	From PSPF *Historic Site Nomination for the Center*
Demolition energy of construction materials for existing buildings	7200 BTU/sf	*Energy Use for Building Construction*
Fraction of materials to be replaced or renovated (f_1)	50%	Assuming replacement of all HVAC, lighting, roofing, windows, exterior doors, plus cosmetic repairs, addition of insulation, and accessibility upgrades.
Demolition debris rate	173 lbs/sf	*Characterization of Building-Related Construction and Demolition Debris in the United States*[16]
Construction debris rate	4.02 lbs/sf	*Characterization of Building-Related Construction and Demolition Debris in the United States*

Wessman Scheme Building Assumptions

Characteristic	Assumption	Source
Gross floor area	91,200 sf	Assuming full 4-story buildout of the entire T&CC site, minus an 85' proposed road right-of-way.
Building type	Hotel/Motel	Based on May 2011 Wessman plan.
Proposed roadway area	25,500 sf	Assuming 85' ROW through city block.

[15] *Energy Use for Building Construction*, Energy Research Group, Center for Advanced Computation, University of Illinois and Richard G. Stein and Associates, December 1976.
[16] *Characterization of Building-Related Construction and Demolition Debris in the United States*, US Environmental Protection Agency, Franklin Associates, June 1998.

Characteristic	Assumption	Source
Invested energy per sf specific to building type	1130 MBTU/sf	*Energy Use for Building Construction*
Invested energy per sf of roadway	2 MBTU/sf	*Energy Use for Building Construction*
Demolition debris rate	173 lbs/sf	*Characterization of Building-Related Construction and Demolition Debris in the United States*
Construction debris rate	4.02 lbs/sf	*Characterization of Building-Related Construction and Demolition Debris in the United States*

3.3 Summary of results

Embodied Energy Comparison

	Preservation Scheme	Wessman Scheme
Embodied Energy Investment		
existing	53,392,000 MBTU	53,392,000 MBTU
renovation	26,696,000 MBTU	
new building construction		103,056,000 MBTU
new roadway construction		51,000 MBTU
subtotal	80,088,000 MBTU	156,499,000 MBTU
Demolition Energy	204,480 MBTU	408,960 MBTU
Total Embodied Energy	**80,292,480 MBTU**	**156,907,960 MBTU**

The Wessman Scheme exhibits an embodied energy investment that is nearly 100% higher than the Preservation Scheme in which half of the material in the existing building is removed and replaced. The Preservation Scheme is, conservatively, the equivalent of saving 665,778 gallons of gasoline when compared to the Wessman scheme. **This is equivalent to taking nearly 4% of the drivers in Palm Springs off the road for one year.**

Construction and Demolition Waste Comparison

	Preservation Scheme	Wessman Scheme
demolition	2457 tons	4913 tons
renovation	57 tons	
new construction		183 tons
Total C&D Waste	**2514 tons**	**5096 tons**

Again, the Wessman Scheme performs poorly in comparison to the Preservation Scheme. A complete teardown and rebuild of the site results in more than twice as much construction and demolition debris when compared to an extensive rehabilitation of the T&CC. It is conceivable that much of the non-hazardous construction and demolition debris can be diverted from the landfill and recycled. However, there is no obligation placed on the developer by the City to do so. Any construction and demolition waste recycling is the prerogative of the owner, and is performed at the owner's additional expense.

4. LEED COMPARATIVE ANALYSIS

4.1 Summary of the LEED rating system

The Leadership in Energy and Environmental Design (LEED) rating system is a voluntary set of elective and prerequisite criteria developed by the US Green Building Council (USGBC). Third-party certification of LEED compliance is available through the Green Building Certification Institute (GBCI), making the LEED Rating System the most objective and widely accepted standard for green buildings available today.

The LEED rating system offers criteria addressing five major categories of sustainable design and development: sustainable site development, water resources, energy and atmosphere, material resources, and indoor environmental quality. Upon certification by the GBCI, a project may be awarded one of four levels of LEED certification, depending on a point scoring system: basic certification, Silver, Gold, or Platinum.

The USGBC has developed several different LEED rating systems, each applicable to a different project type. For the purpose of this comparative analysis, we are using the 2009 edition of the LEED for New Construction (LEED-NC) Rating System, which is also applicable to major renovations of existing buildings. For more information about LEED for New Construction, and to review the criteria, visit:

http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220.

The City of Palm Springs has identified the LEED rating system as an acceptable objective standard for defining green buildings[17].

4.2 Methodology and assumptions

We based the LEED comparative analysis on the following general assumptions. Specific assumptions are described in the LEED Comparison Matrix.

Characteristic	Preservation Scheme	Wessman Scheme
LEED Project Boundary	100% of current T&CC site.	100% of current T&CC site, except for roadway easement.
Demolition of T&CC	Maximum 50% of building for abatement and rehabilitation.	100% of building and site.

[17] Path to a Sustainable Community, p.26.

New Construction	HVAC, electrical, interior lighting, windows, doors, roofing, landscape, irrigation, accessibility, <50% interior elements.	100% new construction.
Building Use	Mixed use: retail, office, and hospitality.	Boutique hotel.
Building Type	Existing 2-story metal framed.	New 4-story.
Gross Floor Area	56,800 sf	91,200 sf

For the comparison, we preformed an analysis of each LEED criteria for each scheme, using the assumptions described above. LEED points were assigned in the following manner:

"Y" (green column). The project is entitled to claim these points based on the assumptions, the project location, or the demands of California code requirements. These are considered "baseline" LEED points.

"?" (yellow column). The project *may* be entitled to claim these points based on realistic options available to the design/construction team, as described in the "Assumptions" column. These are considered "optional" LEED points.

"N" (pink column). The project is not realistically entitled to claim these points due to project factors described in the "Assumptions" column. These are considered "unachievable" LEED points.

4.3 Comparison summary

The complete LEED Comparison Matrix can be found in Appendix A of this report. Here is a summary of the results:

Metric	Preservation Scheme	Wessman Scheme
Baseline LEED points	30	21
Optional LEED points	59	57
Unachievable LEED points	21	32
Points required to meet minimum LEED certification (= 40 minimum points – baseline)	10	19
Maximum LEED points (= baseline + optional)	89 (Platinum)	78 (Gold)

Using LEED certification as a benchmark for the "greenness" of a building, the Preservation Scheme outperforms the Wessman Scheme, both in ease of achieving LEED and in maximum potential LEED certification level.

5. CONNECTIVITY, TRANSPORTATION, AND PARKING

5.1 Alternative transportation and sustainable development

As explained in Section 3 *Embodied Energy Comparison*, buildings consume almost half of the energy production in the United States. Buildings are thereby also responsible for nearly half of the greenhouse gas (GHG) emissions in the US. Following buildings, the second largest consumer of energy is transportation. When considering a building project's total contribution of GHG emissions, it is important to consider that project's overall effects on transportation. Projects that make it more convenient, safe, and pleasurable to use alternative means of transportation will contribute fewer GHG emissions than projects that prioritize single-occupancy vehicle use at the expense of other forms of transportation.

Signed into law in 2008, California Senate Bill 375 aims to reduce greenhouse gas emissions from passenger vehicle travel through the implementation of land use and transportation planning principles that "promote walking, bicycling, and outdoor recreation, and less time spent on congested roadways"[18]. It is important for local jurisdictions to start considering how SB 375-compliant land use planning will affect decision-making at the General Plan, Specific Plan, and project levels. The location of the Town and Country Center in relation to the Desert Fashion Plaza makes it a central component of the overall transportation strategy for whichever Plan is eventually implemented.

5.2 Vehicular traffic

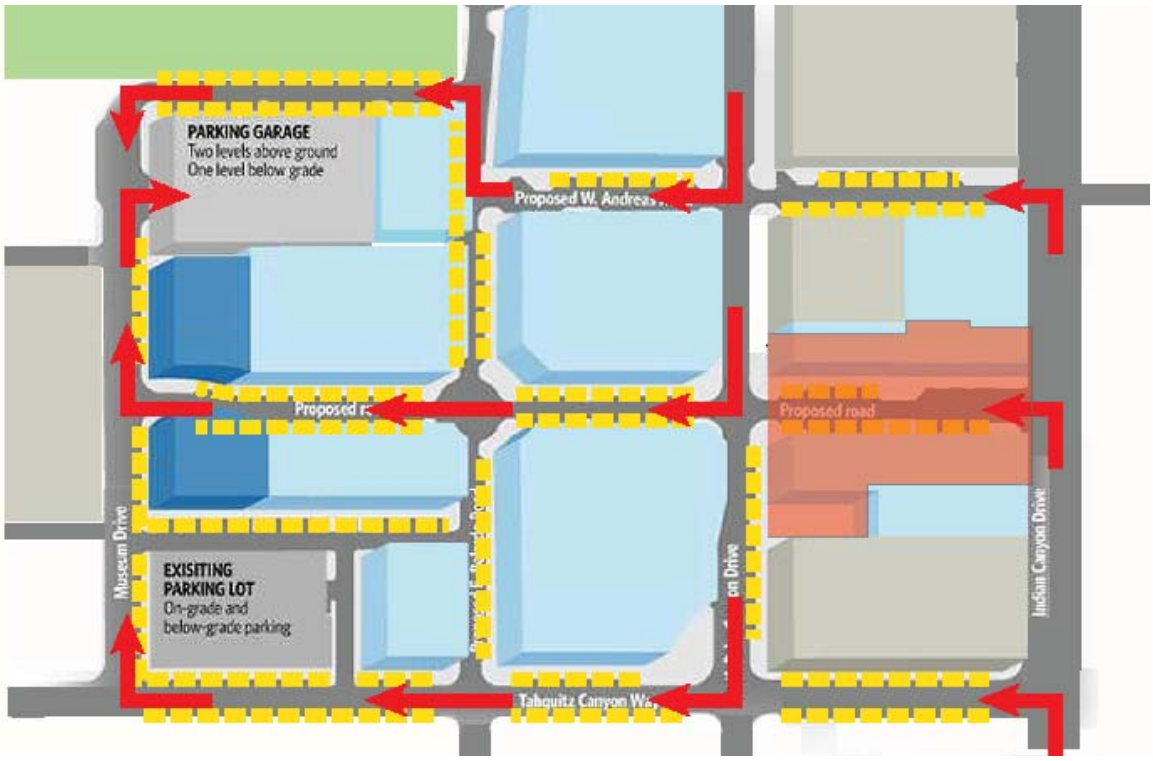
One of the admirable distinguishing features of both the May 2011 Wessman Plan and the Community Concept Plan is the way in which the mega-block of the existing Desert Fashion Plaza mall is divided up into a village-like street grid, creating a smaller "grain" of development and affording more opportunities for street-level retail engagement. It is worth noting, however, that this does not represent a "restoration" of a historic street grid, but rather the imposition of a village scheme upon a district that had originally been planned in a linear fashion along Highway 111. The use of that highway has changed over time, as evidenced by CalTrans' realignment of the Highway around downtown Palm Springs. The Community Concept Plan embraces the transformation of the former highway into a slower-paced retail corridor, and more fully integrates the narrower, more commercial Palm Canyon Drive. By proposing a vehicular axis that connects the Palm Springs Art Museum to the former northbound Highway 111 (Indian Canyon Drive) to the east, the

[18] California Air Resources Board Resolution 10-31, September 23, 2010.

Wessman Plan clings to the notion that both Indian Canyon and Palm Canyon Drives should remain one-way high-speed highway-like thoroughfares. It prioritizes the conveyance of traffic through the district rather than seeking to slow traffic to make the district more hospitable for retail and entertainment.

Wessman Plan Vehicular Access. The Wessman Plan directs traffic down multiple thoroughfares towards large parking facilities (red arrows), directly though the interior of the development. The T&CC is demolished to make way for a major vehicle connection between Indian Canyon Drive and the parking structures on the west side of the Plan. All roadways are shared with pedestrians and bicyclists. There is considerable street parking (yellow dashed lines) throughout the development, encouraging patrons to make multiple car trips in a single visit. The combination of traffic flows, multiple intersections, and on-street parking increases the likelihood of gridlock. Vehicular traffic must pass through a distracting environment in which there is not adequate separation between automobiles and pedestrians.

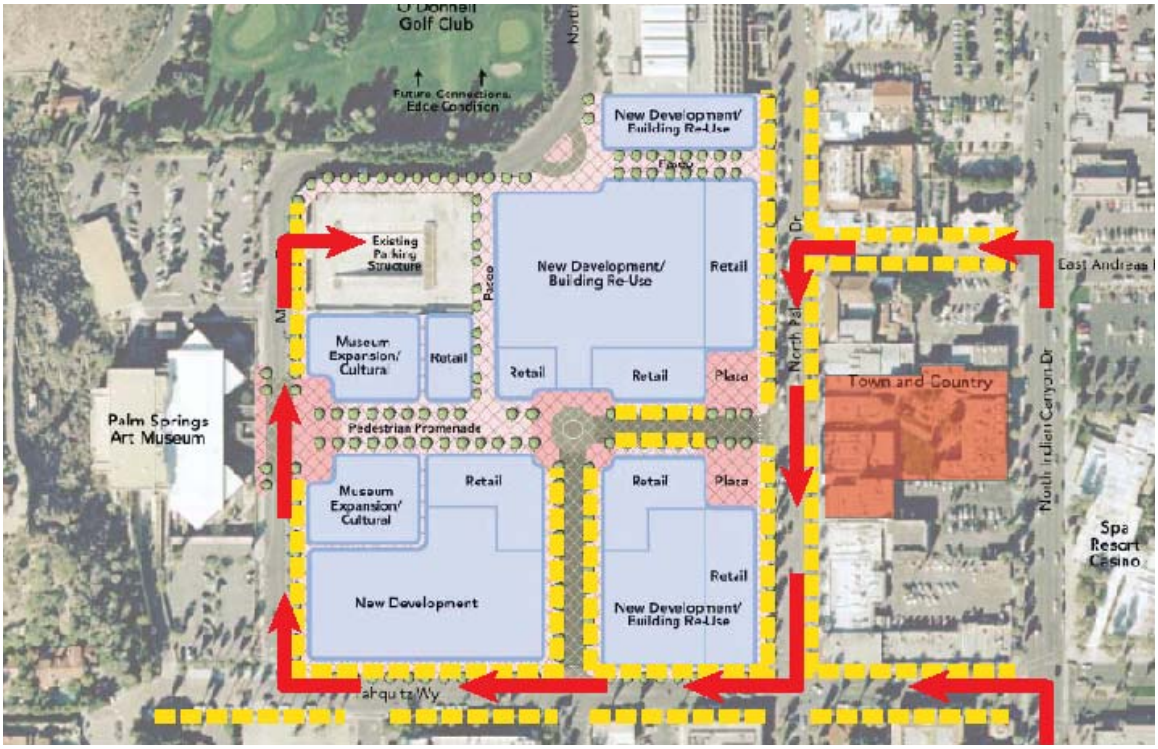
Wessman Plan: Vehicular Access to Parking



Community Concept Plan Vehicular Access. The Community Concept Plan directs traffic down existing wide thoroughfares towards large

parking facilities (red arrows), keeping the interior of the development accessible, safe, and comfortable for pedestrians and cyclists. There is adequate street parking (yellow dashed lines), but it, too, is largely on the perimeter of the development. This scheme is an example of "park-once" development, where patrons park one time and can comfortably walk to their destinations. This provides direct exposure of storefronts to potential customers, reduces vehicle trips, and reduces potential for gridlock. A plan like the Community Concept Plan does not necessitate the demolition of the T&CC.

Community Concept Plan: Vehicular Access to Parking



The defining difference between the Wessman Plan and the Community Concept Plan is in the ability to drive down the Palm Springs Art Museum axis. The burgeoning regulatory environment in California (SB 375) and the greater movement towards sustainability suggests that an automobile-dominant streetscape should no longer be the default approach to urban planning. Many progressive cities are seeking to better integrate private vehicles, public transportation, bicycle, and pedestrian traffic. Pedestrian plazas and promenades have seen commercial success in cities as diverse as Santa Monica, Rancho Cucamonga, Portland, Denver, and Madison, Wisconsin. There are many factors that contribute to the success or failure of a pedestrian promenade; however, there is no inherent quality of downtown Palm Springs that would preclude the success of such a plan. In fact, the demands of SB 375, Chapter

Three of the *Palm Springs Path to a Sustainable Community,* and the *Desert Fashion Plaza Community Concept Plan* require a serious investigation of a more pedestrian-oriented scheme that better integrates passenger vehicle roadways, paseos, and pedestrian promenades to achieve a smaller "grain" of development while diverting vehicle traffic around rather than through the development.

5.3 Pedestrian access

Pedestrians travelling to the new shopping district are likely to be arriving from one of three places: the parking structures along Museum Drive, on-street parking, or the Spa Resort Casino located on Indian Canyon Drive. If the goal is to enliven the retail experience, it is preferable to direct vehicles to a centralized, safe, and convenient parking structure, and make it pleasant and safe to walk to destinations within the district. This reduces gridlock, parking stall requirements, and increases exposure of storefronts to pedestrians.

It is important to note that patrons arriving from the Spa Resort Casino would most likely exit that facility through the traditional front entrance, at the corner of Indian Canyon Drive and Tahquitz Canyon Way. To access the museum on foot from that location, the natural tendency would be to travel a straight line along Tahquitz Canyon Way. To draw pedestrians away from that route, and towards the shopping district via the museum axis, attractive signage and the promise of amenities would have to be provided, possibly along with a slight reconfiguration of the Spa Resort Casino entrances.

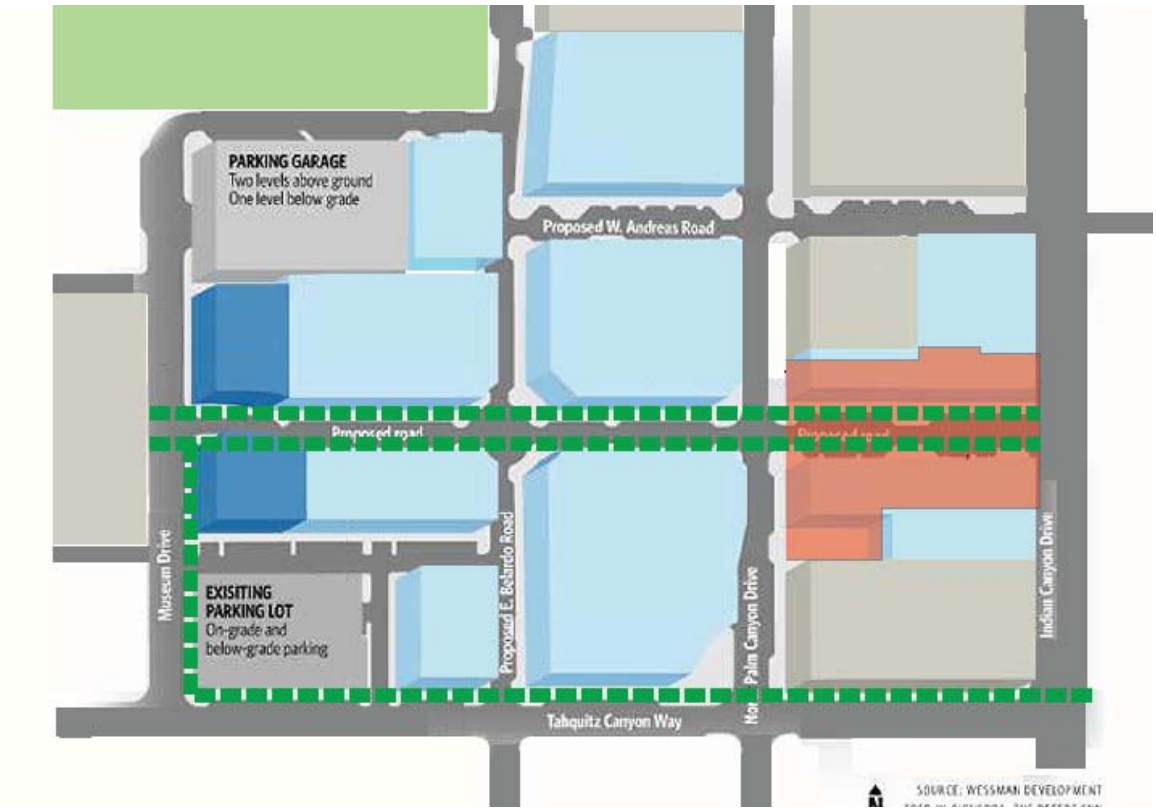
As described elsewhere in this report, the Town and County Center possesses that most desirable Palm Spring amenity: an irrigated, landscaped oasis. In the Community Concept Plan, the T&CC courtyard anchors a string of plazas connected by pedestrian promenades and low-traffic streets. This arrangement alone satisfies most of the Plan design objectives,[19] and would provide a far more attractive pedestrian connection between the Spa Resort Casino and the Museum, as opposed to a vehicular connection that is barely distinguishable from the streets to the north and south.

> **Wessman Plan Pedestrian Access from Spa Resort Casino.** The Wessman Plan does not offer any pedestrian promenades or plazas. All thoroughfares give priority to vehicular access. There is no compelling feature to draw pedestrians into the district from the Spa Resort Casino main entrance at Indian Canyon Drive and Tahquitz Canyon Way. There are multiple pedestrian/vehicle interactions. Festival events would

[19] Desert Fashion Plaza Community Concept Plan, p. 10.

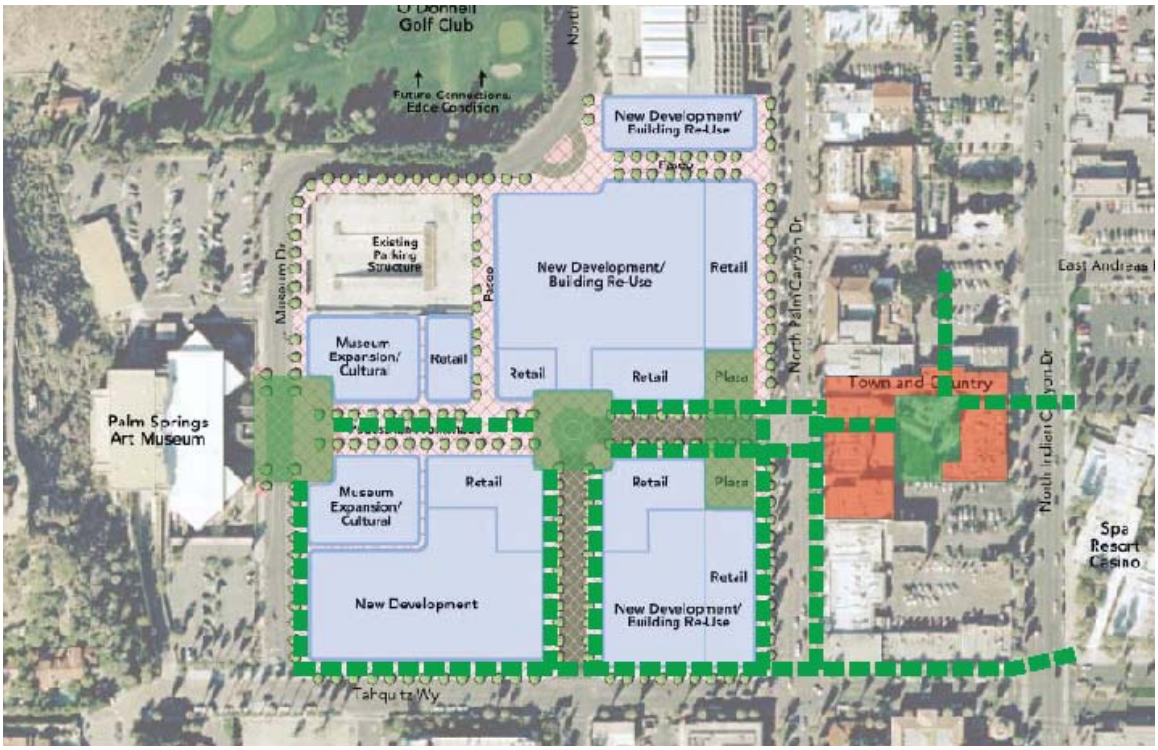
necessitate the closure of streets. The view to the Art Museum and mountains beyond is best enjoyed through a car windshield.

Wessman Plan: Pedestrian Access from Spa Resort Casino



Community Concept Plan Pedestrian Access from Spa Resort Casino. The Community Concept Plan provides a string of plazas and promenades that offer a variety of types and scales of public space. Thoroughfare types include major arterial streets, mixed pedestrian/vehicular traffic, and pedestrian-only. Pedestrians from the Spa Resort Casino could still access the museum via Tahquitz Canyon Way, but plaza features are more likely to draw those pedestrians into the shopping district. The number of pedestrian/vehicle interactions is considerably reduced. The Town and Country Center is retained as a landscaped terminus to the main axis, providing a more intimate outdoor space suitable for respite from the heat and for smaller festival events. Festival events would not require the closure of major streets. The view to the Art Museum and mountains beyond is enjoyed from a major pedestrian promenade.

Community Concept Plan: Pedestrian Access from Spa Resort Casino



As described in section 2.5 above, the Community Concept Plan describes several design objectives and planning elements that address transportation and connectivity, which are fundamental to sustainable urban planning and reducing the number of single-occupancy vehicle trips. The following chart summarizes those objectives and compares each Plan's response:

Design Objective	Community Concept Plan	Wessman Plan
Create a unique blend of spaces.	Outdoor spaces include intimate landscaped oasis, festival-ready promenade, narrow paseos, widened sidewalks.	Outdoor spaces consist mainly of widened sidewalks.
Enhance views to the mountains and art museum.	Views from T&CC balcony, through paseo, along roadway, and from promenade.	Views along roadway, from parking lot of Spa Resort Casino.
Walkable and human scale development.	Variety of pedestrian corridors, slower traffic, reduced vehicle/pedestrian interaction.	Sidewalk corridors only, higher traffic volumes, higher speeds, increased vehicle/pedestrian interaction.
Strong east-west connection through site.	Terminus at both ends, variety of ways to experience the axis.	Terminus at one end, axis can best be experienced by automobile.

Design Objective	Community Concept Plan	Wessman Plan
Create places to gather including a variety of interconnected open spaces, from large community plazas to small, intimate spaces.	Variety of outdoor space types, connected by a variety of pedestrian thoroughfares.	No apparent outdoor spaces.
Include "festival" streets.	Promenade and T&CC courtyard can be used for festivals without necessitating the closure of streets.	Festival events will always require street closure.
Incorporate sustainable and climate responsive building and landscape elements.	Encourages alternative transportation, mitigates heat island effect, more opportunities for landscaping.	Discourages alternative transportation, increases heat island effect, fewer opportunities for landscaping.

6. THE PALM SPRINGS PATH TO A SUSTAINABLE COMMUNITY

6.1 Summary of the document

On March 25, 2009 the City issued the Draft *Palm Springs Path to a Sustainable Community*, which established a triple-bottom line approach to decision-making, and mapped out a course achieving a more sustainable community. The document consists of a Vision Statement, Guiding Principles, Strategic Outcomes, and Objectives and Actions. We will evaluate the Wessman Plan/Wessman Scheme against the Community Concept Plan/Preservation Scheme, and determine how well each complies with the *Path to a Sustainable Community* Guiding Principles and Objectives and Actions.

6.2 Guiding principles

The Guiding Principles consist of a series of questions meant to apply to all City decision-making, in order to determine consistency with the Master Plan described in the document. The following comparison briefly compares each project's answers to the questions posed.

Guiding Principle Qualification	Community Concept Plan & Preservation Scheme	Wessman Plan & Wessman Scheme
Will this action conserve resources?	Yes, existing cultural, material, and energy resources will be conserved.	No.
Will this action help the City eliminate waste and recycle and reuse resources?	Yes, most of the existing T&CC will remain in place and not go to landfill.	No, the existing T&CC will be demolished and sent to landfill, recycled, or downcycled.
Will this action reduce/eliminate toxic materials?	Yes, toxic materials will be abated.	Yes, toxic materials will be abated. However, new construction will introduce new potentially toxic materials.
Does this action help the City develop and/or support renewable resources?	Maybe. A renovated T&CC could support photovoltaics.	Maybe. New construction could support photovoltaics.
Will this action help the City grow innovation and green business (green technology, green collar jobs, green building, ecotourism, clean processes and products)?	Maybe. A Community Concept Plan that fully embraces sustainability may reveal opportunities for innovation in green planning and design.	No apparent embrace of sustainability.

Guiding Principle Qualification	Community Concept Plan & Preservation Scheme	Wessman Plan & Wessman Scheme
Does this action restore ecosystems and habitats?	Maybe. A properly landscaped T&CC courtyard could support a "micro-habitat".	No apparent landscaping opportunities.
Does this action help to promote and communicate the idea of sustainability within the community?	Yes.	No.
How does this action improve health, safety and quality of life for all citizens?	By mitigating blight, providing a safe walkable district, improving the economy of the area, providing public gathering areas.	By mitigating blight, improving the economy of the area.
Is there a balance between the cost and benefit of this action?	Maybe. Comparative economic analysis needed.	Maybe. Comparative economic analysis needed.

6.3 Objectives

Objectives of the Path *to a Sustainable Community* are spread across eight goal areas: Sustainable City Management and Operations, Economic Vitality, Sustainable Urban Development and Transportation Choice, Climate Change, Energy Conservation and Renewable Energy, Healthy Ecosystems, Waste, and Water. The following comparison briefly compares each project with the prescribed objectives. In many cases, objectives will not be directly applicable to either project, and will be marked "not applicable" ("n/a").

Legend:
- ● Meets objective.
- ◐ May meet objective.
- ○ Does not meet objective.
- n/a Not applicable.

Objective	Community Concept Plan & Preservation Scheme	Wessman Plan & Wessman Scheme
Sustainable City Management and Operations		
Embed sustainable principles and practices into city operations.	n/a	n/a
Adopt sustainable practices and purchasing policies.	n/a	n/a
Retrofit existing and develop new public facilities as models of sustainability.	●	○

Objective	Community Concept Plan & Preservation Scheme	Wessman Plan & Wessman Scheme
Embed sustainability concepts and practices into the local culture through education, promotion and community engagement.	●	○
Economic Vitality		
Incubate, grow and attract new sustainable industries to Palm Springs, focusing on innovation, renewable energy production, clean technology, green products and services and climate change.	◐	◐
Grow Palm Springs' local economy by retaining and expanding small and locally-owned businesses, increasing exports and decreasing imports.	●	◐
Establish Palm Springs as a premiere ecotourism destination in the US by improving existing industry practices and expanding cultural and nature-based tourism.	●	○
Encourage sustainable business practices.	●	○
Sustainable Urban Development and Transportation Choice		
Increase the number of green buildings.	●	◐
Promote smart growth and transportation choice.	●	○
Promote alternative, sustainable transportation options and infrastructure using alternative modes, fuels and vehicles.	●	○
Climate Change		
Establish a baseline inventory and forecast, ongoing tracking and reporting mechanism for GHG emissions.	n/a	n/a
Develop strategies to reduce contributions to GHG emissions to 1990 levels by 2020 and carbon neutrality by 2030.	●	○
Pursue energy efficient transportation options that reduce GHG emissions.	●	○
Energy Conservation and Renewable Energy		
Reduce local government and per capita energy consumption.	○	○
Support development of local and regional renewable electric power generation including onsite solar and, where appropriate, use clean distributed generation to supply base load electricity.	◐	◐
Healthy Ecosystems		
Promote access to sustainable, open space, recreation and natural resources.	●	○

Objective	Community Concept Plan & Preservation Scheme	Wessman Plan & Wessman Scheme
Support efforts to protect and enhance regional ecosystems.	○	○
Waste		
Reduce waste and increase recycling for all segments of the community.	●	○
Create closed-loop systems in which waste from one source becomes the supply for another.	○	○
Water		
Support efforts to ensure a secure water supply for the future.	◐	◐
Reduce water use in City facilities.	n/a	n/a
Reduce water usage per capita in Palm Springs.	◐	◐
Totals		
● Meets objective.	**12**	**0**
◐ May meet objective.	**4**	**6**
○ Does not meet objective.	**3**	**13**
n/a Not applicable.	**4**	**4**

The Community Concept Plan and T&CC Preservation Scheme satisfy a majority of the City's sustainability objectives. The Wessman Plan and Wessman Scheme for the T&CC site do not directly satisfy any of the City's objectives, and would be unable to meet a majority of them.

APPENDIX A LEED COMPARATIVE ANALYSIS MATRIX

LEED-NC 2009 New Construction Comparison Scorecard
6/9/2011

Town and Country Center Sustainability Assessment
174 North Palm Canyon Drive
Palm Springs, CA 92262

LEED Criteria		Points Possible	Preservation Scheme				Wessman Scheme			
			Y	?	N	Assumptions	Y	?	N	Assumptions
Sustainable Sites										
SSp1	Construction Activity Pollution Prevention	P		Y		Minimal site disturbance; very achievable.	Y			Required by regulations.
SSc1	Site Selection	1	1			Not an environmentally sensitive site.	1			Not an environmentally sensitive site.
SSc2	Development Density and Community Connectivity	5	5			Urban context usually complies.	5			Urban context usually complies.
SSc3	Brownfield Redevelopment	1			1	Not a brownfield.			1	Not a brownfield.
SSc4.1	Alternative Transportation: Public Transportation Access	6	6			SunLine routes 12 & 15.	6			SunLine routes 12 & 15.
SSc4.2	Alternative Transportation: Bicycle Storage & Changing Rooms	1		1		Achievable with (1) bike rack & (1) shower facility.		1		Achievable with multiple bike racks and shower facilities.
SSc4.3	Alternative Transportation: Low Emission & Fuel Efficient Vehicles	3		3		If existing parking is retained, achievable with signage. If existing parking is developed, compliance would require a district approach.		3		If facility parking is provided, achievable with signage. If centralized parking is provided, compliance would require a district approach.
SSc4.4	Alternative Transportation: Parking Capacity	2	2			No new parking provided.		2		Compliant only if minimal parking provided.
SSc5.1	Site Development: Protect or Restore Habitat	1		1		Possible if courtyard is predominantly landscaped with native/adaptive vegetation.			1	Not possible, assuming full buildout of site.
SSc5.2	Site Development: Maximize Open Space	1	1			Courtyard meets open space requirements.			1	Not possible, assuming full buildout of site.
SSc6.1	Stormwater Design: Quantity Control	1		1		Possible with surface structures in courtyard, coordinated with landscaping.			1	Not possible, assuming full buildout of site.
SSc6.2	Stormwater Design: Quality Control	1		1		Possible with surface structures in courtyard, coordinated with landscaping.			1	Not possible, assuming full buildout of site.
SSc7.1	Heat Island Effect: Non-Roof	1	1			Existing concrete is light in color and shaded.		1		Achievable only if asphalt roadway is not considered part of the project site.
SSc7.2	Heat Island Effect: Roof	1	1			Assuming that roof replacement is required, code mandates white roof.	1			Code mandates white roof if low-slope.
SSc8	Light Pollution Reduction	1	1			Existing "shoebox" luminaires appear to be compliant.		1		Achievable, if no uplighting used.
	Sustainable Sites subtotals	**26**	**18**	**7**	**1**		**13**	**8**	**5**	

LEED Criteria		Points Possible	Preservation Scheme				Wessman Scheme			
			Y	?	N	Assumptions	Y	?	N	Assumptions
Water Efficiency										
WEp1	Water Use Reduction	P		Y		Would require replacement of plumbing fixtures.	Y			Required by CALGreen code.
WEc1	Water Efficient Landscaping	4		2	2	Assuming no reclaimed water available. Drip irrigation & native/adaptive landscape palette required.		2	2	Assuming no reclaimed water available. Drip irrigation & native/adaptive landscape palette required.
WEc2	Innovative Wastewater Technologies	2			2	Not normally feasible.			2	Not normally feasible.
WEc3	Water Use Reduction	4		3	1	Would require replacement of plumbing fixtures with very low-flow fixtures.		3	1	Would require very low-flow fixtures.
	Water Efficiency subtotals	**10**	**0**	**5**	**5**		**0**	**5**	**5**	
Energy & Atmosphere										
EAp1	Fundamental Commissioning of Building Energy Systems	P		Y		Recommended practice when lighting/HVAC systems are replaced.	Y			Required by CALGreen code.
EAp2	Minimum Energy Performance	P	Y			Requires 10% improvement over Title 24. Easily achievable assuming envelope/lighting/HVAC is improved or replaced.		Y		Easily achievable on new construction.
EAp3	Fundamental Refrigerant Management	P	Y			All new HVAC is compliant.	Y			All new HVAC is compliant.
EAc1	Optimize Energy Performance	19		8	11	Assuming 22% better than Energy Code. LEED grants higher credit to existing buildings.		6	13	Assuming 22% better than Energy Code. LEED grants higher credit to existing buildings.
EAc2	On-Site Renewable Energy	7		7		Up to 7 points for up to 13% renewable energy.		7		Up to 7 points for up to 13% renewable energy.
EAc3	Enhanced Commissioning	2		2		Recommended practice when lighting/HVAC systems are replaced.		2		Recommended practice.
EAc4	Enhanced Refrigerant Management	2			2	Not achievable, assuming either package HVAC or VRF system.			2	Achievable only with hydronic central plant system. Not typical for assumed 4 story hotel building.
EAc5	Measurement & Verification	3		3		Recommended practice.		3		Recommended practice.
EAc6	Green Power	2		2		Very inexpensive for a facility of this size.		2		Achievable, but not as affordable for larger facilities.
	Energy & Atmosphere subtotals	**35**	**0**	**22**	**13**		**0**	**20**	**15**	
Materials & Resources										
MRp1	Storage & Collection of Recyclables	P		Y		Provide a trash/recycling enclosure.		Y		Provide a trash/recycling enclosure.
MRc1.1	Building Reuse: Maintain Existing Walls, Floors, & Roof	3	3			All exterior walls, floors, and roof to remain. Windows and roofing material are exempt.			3	Existing building is demolished.
MRc1.2	Building Reuse: Maintain Interior Non-Structural Elements	1	1			50% of interior elements assumed to remain.			1	Existing building is demolished.

LEED Criteria		Points Possible	Preservation Scheme				Wessman Scheme			
			Y	?	N	Assumptions	Y	?	N	Assumptions
Materials & Resources (cont.)										
MRc2	Construction Waste Management	2		2		Credit is easier to achieve in rehabilitation: less waste, materials are deconstructed rather than wrecked and mixed.		2		Credit is harder to achieve with demolition: more waste, materials are wrecked and mixed rather than deconstructed.
MRc3	Materials Reuse	2		2		Demolished materials may be used onsite for new purposes.		2		Demolished materials may be used onsite for new purposes.
MRc4	Recycled Content	2		2		Up to 2 points for up to 20% recycled content.		2		Possible only if steel frame building.
MRc5	Regional Materials	2		2		Up to 2 points for up to 20% recycled content.		2		Possible only if concrete or masonry block building.
MRc6	Rapidly Renewable Materials	1		1		Rehabilitation project will have high percentage of interior finish materials. It is much easier to find rapidly renewable content in interior finish materials.			1	Very unlikely in new construction.
MRc7	Certified Wood	1		1		50% of all new wood assumed to be FSC certified.		1		Very unlikely if wood-framed building.
	Materials & Resources subtotals	**14**	**4**	**10**	**0**		**0**	**9**	**5**	
Indoor Environmental Quality										
EQp1	Minimum IAQ Performance	P	Y			Required by Energy Code, assuming HVAC is replaced.	Y			Required by Energy Code.
EQp2	Environmental Tobacco Smoke Control	P	Y			Required by state law.	Y			Required by state law.
EQc1	Outdoor Air Delivery Monitoring	1		1		Possible assuming HVAC is replaced.		1		Achievable.
EQc2	Increased Ventilation	1		1		Achievable.		1		Achievable.
EQc3.1	Construction IAQ Management Plan: During Construction	1		1		Achievable.		1		Achievable.
EQc3.2	Construction IAQ Management Plan: Before Occupancy	1		1		Achievable.		1		Achievable.
EQc4.1	Low-Emitting Materials: Adhesives & Sealants	1	1			Required by SCAQMD.	1			Required by CALGreen code.
EQc4.2	Low-Emitting Materials: Paints & Coatings	1	1			Required by SCAQMD.	1			Required by CALGreen code.
EQc4.3	Low-Emitting Materials: Carpet Systems	1		1		Achievable.	1			Required by CALGreen code.
EQc4.4	Low-Emitting Materials: Composite Wood & Agrifiber Products	1	1			Required by CARB.	1			Required by CALGreen code.
EQc5	Indoor Chemical & Pollutant Source Control	1			1	Not achievable. Requires walk-off grates at all exterior entrances, which is not feasible.			1	Not achievable, assuming multiple street-facing entrances. Requires walk-off grates at all exterior entrances, which is not feasible.
EQc6.1	Controllability of Systems: Lighting	1		1		Achievable.		1		Achievable.
EQc6.2	Controllability of Systems: Thermal Comfort	1		1		Achievable.		1		Achievable.
EQc7.1	Thermal Comfort: Design	1		1		Achievable.		1		Achievable.
EQc7.2	Thermal Comfort: Verification	1		1		Achievable.		1		Achievable.
EQc8.1	Daylight and Views: Daylight 75% of Spaces	1			1	Not achievable with existing fenestration.			1	Not achievable, assuming four-story building and footprint as shown on plan.

LEED Criteria		Points Possible	Preservation Scheme				Wessman Scheme			
			Y	?	N	Assumptions	Y	?	N	Assumptions
Indoor Environmental Quality (cont.)										
EQc8.2	Daylight and Views: Views for 90% of Spaces	1	1			Narrow building footprint insures views from nearly all spaces.		1		Achievable.
	Indoor Environmental Quality subtotals	**15**	**4**	**9**	**2**		**4**	**9**	**2**	
Innovation & Design Process										
IDc1.1	Innovation in Design	1		1		Achievable.		1		Achievable.
IDc1.2	Innovation in Design	1		1		Achievable.		1		Achievable.
IDc1.3	Innovation in Design	1		1		Achievable.		1		Achievable.
IDc1.4	Innovation in Design	1		1		Achievable.		1		Achievable.
IDc1.5	Innovation in Design	1		1		Achievable.		1		Achievable.
IDc2	LEED Accredited Professional	1	1			Assume a LEED professional on the design/construction team.	1			Assume a LEED professional on the design/construction team.
	Innovation & Design subtotals	**6**	**1**	**5**	**0**		**1**	**5**	**0**	
Regional Priority: 92262										
SSc1	Site Selection	1	1			See SSc1.	1			See SSc1.
SSc2	Development Density and Community Connectivity	1	1			See SSc2.	1			See SSc2.
SSc4.1	Alternative Transportation: Public Transportation Access	1	1			See SSc4.1.	1			See SSc4.1.
WEc1.1	Water Efficient Landscaping	1		1		See WEc1.		1		See WEc1.
WEc3	Water Use Reduction (40%)	1			1	See WEc3.			1	See WEc3.
EAc2	On-Site Renewable Energy (1%)	1		1		See EAc2.		1		See EAc2.
	Regional Priority subtotals	**4**	**3**	**1**	**0**	Maximum 4 points allowed.	**3**	**1**	**0**	Maximum 4 points allowed.
	Total	**110**	**30**	**59**	**21**		**21**	**57**	**32**	

(**Certified** 40-49 points, **Silver** 50-59 points, **Gold** 60-79 points, **Platinum** 80-110 points).

APPENDIX B CONSULTANT'S QUALIFICATIONS

Eric R. Shamp, AIA, NCARB, LEED® AP

Principal, Ecotype Consulting

Eric Shamp is a licensed architect, and has dedicated his career to the practice of sustainable design and development for the past eight years. He founded Ecotype Consulting in order to respond to the ever-increasing demand for green building consulting in and around the inland communities of southern California. By locating the business in a historic daylit building with operable windows within biking distance of his home, he has reduced his personal carbon emissions by more than 50%.

From 2000 to 2008, Mr. Shamp was responsible for directing and coordinating sustainable design efforts at HMC Architects, a 450-person architecture firm with 10 offices, headquartered in Ontario, California. In that role, he was responsible for research, education, marketing, and consulting in energy and resource efficient design. He provided sustainability master planning, energy analysis and modeling, whole building analysis, materials research, sustainable design and site planning, and "green team" building for a wide variety of projects for HMC project teams and directly to clients. In 2006, he was named corporate-wide Sustainable Design Director and was promoted to Associate Principal. At that time, he also established the HMC Sustainable Design Studio, and oversaw its development as a specialized sustainable design service provider within HMC. The Studio grew to a staff of four before Mr. Shamp left the firm to pursue independent consulting.

Mr. Shamp has been active on the Collaborative for High Performance Schools (CHPS) Technical Committee, the California Department of Water Resources Alluvial Fan Task Force, the AIA Inland California Blueprint for America Task Force, and the City of Redlands Climate Action Task Force. He serves on the City of Redlands Planning Commission, and is the former vice-chair of Redlands' Historic and Scenic Preservation Commission. He is an executive committee member of the Redlands' Climate Action Task Force, charged with leading the development of green building standards for the City.

In keeping with his belief that sustainable design must become mainstream in order to have a positive effect on our quality of life, Mr. Shamp provides LEED training through the US Green Building Council – Inland Empire, and

has served as instructor or guest lecturer at UC Riverside Extension, San Bernardino Community College, and the University of Redlands.

Mr. Shamp holds a Bachelor of Arts with a double major in architecture and art/art history and a Bachelor of Architecture, both from Rice University. He has been a licensed Architect in the state of California since 2003 (license number C29013), and is accredited with the National Council of Architectural Registration Boards (NCARB). He is also a Qualified Commissioning Provider (QCxP), a LEED® Accredited Professional since 2003, and a member of the American Institute of Architects, US Green Building Council, ASHRAE, and the California Association of Building Energy Consultants.