



looking NORTH on GRANT AVE



looking WEST on GRANT AVE



looking SOUTHWEST on GRANT AVE



looking SOUTHWEST at GRANT AVE-CATRON ST intersection

**STREET VIEWS - PLAN OPTIONS 2B & 2C**

**Landscape Concepts**

Keep existing trees, add new trees and make planter boxes at grade, walkable and larger for tree health. Cut curbs to let water in from street during storm events.

Change in paving indicates entrance to building

Green roof on mixed-use location uses water harvested from parking structure. Cistern located in parking structure.

Green vines on wall creates a neighborhood friendly streetscape

Tree grove with planters creates a welcoming entry and areas for sitting outside. Water harvested from parking garage.

Structured area

Catron Street

Griffin Street

Structured parking

New County Administration Building

Additional space

Additional space

Structured parking

Retain visibility to flagpole field on Northeast corner

Light well

Tall thin trees, water feature and unique paving create a more intimate entry patio

Vegetated wall separates entry patio from streetscape

Grant Avenue



**Existing Building with Additions on Old Santa Fe Judicial Complex- Landscape Concept**

Keep existing trees, add new trees and make planter boxes at grade, walkable and larger for tree health. Cut curbs to let water in from street during storm events

Change in paving indicates entrance to building

New street trees create small park-like corner in front of mixed use

Green roof/garden on parking structure gives respite from the built surroundings

Water harvested from building and parking structure is stored in cisterns under parking and used for landscape

Urban planters and patio area shaded by street trees

Structured area

Green vines on wall creates a neighborhood friendly streetscape all along Griffin

Catron Street

New County Administration Building

Retain flagpole on Northeast corner

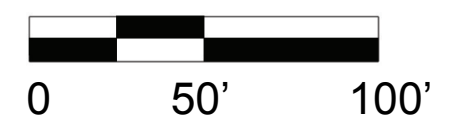
Human scale xeric landscape

Change in paving and welcome planter indicates entrance

Griffin Street

Structured parking

Grant Avenue



**New Building on Old Santa Fe Judicial Site - Landscape Concept**

The following is a summary (pros, cons, and cost) of the six options:

**Option 1A: Renovate existing building, no additions, no community services department, and construct 126 surface parking spaces (pages III-2 to -4 and -8 for conceptual graphic details).**

*Pros*

- The county can consolidate space and eliminate the need for any currently leased space.
- Re-use of existing building is sustainable from a resource utilization perspective.
- A full renovation will result in all new MEP systems, a new roof and finishes, and extend the life of the existing structure.
- Less time is needed for a renovation than to demolish/reconstruct.
- Renovation will include a more energy efficient building envelope coupled with new mechanical systems which will decrease long-term operating costs.
- Renovated skylights and windows will improve daylighting for improved quality of life in the building.
- A renovated building would include all new toilet rooms, new elevators, new stairs, and bring the entire facility up to current building code requirements and accessibility requirements.
- Keeping the county administrative functions downtown which will help maintain the viability of the city/downtown for the citizens of Santa Fe.
- This approach results in the lowest cost to reuse the building and site.

*Cons*

- This approach results in a parking lot of 126 spaces, below the 239-space target which would need to be leased from the city or others.
- Portions of the building were constructed in 1937 utilizing wood floor joists over a crawl space and wood frame construction. This makes part of the building 75 years old.
- The 1979 court additions were designed and constructed with load-bearing masonry walls on all four walls of the two-story stacked courtrooms. While openings can be cut to accommodate circulation, a good portion of these walls need to remain intact, which limits floor plan flexibility for the renovation and subsequent modifications.
- The existing building alone, without expansion, cannot accommodate Community Services. Future expansion on the site would be needed to accommodate future growth.
- Some existing county-owned or leased space and the associated costs would continue into the future.

**Option 1B: Renovate existing building, no additions, no community services department, and construct 243 parking spaces (pages III-5 to -8 for conceptual graphic details).**

*Pros*

- The county can consolidate space and eliminate the need for any currently leased space.
- Re-use of existing building is sustainable from a resource utilization perspective.
- A full renovation will result in all new MEP systems, a new roof and finishes, and extend the life of the existing structure.
- Less time is needed for a renovation than to demolish/reconstruct.
- Renovation will include a more energy efficient building envelope coupled with new mechanical systems which will decrease long-term operating costs.
- Renovated skylights and windows will improve daylighting for improved quality of life in the building.
- A renovated building would include all new toilet rooms, new elevators, new stairs, and bring the entire facility up to current building code requirements and accessibility requirements.
- Keeping the county administrative functions downtown which will help maintain the viability of the city/downtown for the citizens of Santa Fe while creating the required parking for the county and public needs.

*Cons*

- Portions of the building were constructed in 1937 utilizing wood floor joists over a crawl space and wood frame construction. This makes part of the building 75 years old.
- The 1979 court additions were designed and constructed with load-bearing masonry walls on all four walls of the two-story stacked courtrooms. While openings can be cut to accommodate circulation, a good portion of these walls need to remain intact, which limits floor plan flexibility for the renovation and subsequent modifications.
- Constructing the parking deck while working around the existing building creates logistical challenges and increase in cost of parking construction. The irregular-shaped parking area provides a less efficient parking garage layout. The parking structure would need to wrap around two sides of the site.
- The existing building alone, without expansion, cannot accommodate Community Services. Future expansion on the site would be needed to accommodate future growth.

**Options 2A (Includes Community Services Department with 317 parking spaces), 2B (Includes Community Services Department with 330 parking spaces), and 2C (No Community Services Department with 330 parking spaces): Renovate existing building, construct parking spaces, and build additions to accommodate mixed use and future growth space (pages III-9 to -19 for conceptual graphic details).**

*Pros*

- Possible revenue stream by leasing excess space (future growth space) for an undetermined amount of time.
- The county can consolidate space and eliminate the need for a portion of currently leased space.
- Additions could accommodate additional county agencies (including Community Services), resulting in more convenience for constituents.
- Future growth can be accommodated in additions to the building.
- Expanded daycare facilities in the downtown area could be a positive feature of the project for county employees.
- Additions could accommodate other socially and culturally advantageous tenants – i.e. “artist incubator space” – until the county needs the space.
- Keeping the county administrative functions downtown will maintain the viability of the city/downtown for the citizens of Santa Fe while creating the required parking for the county and public.

*Cons*

- Portions of the building were constructed in 1937 utilizing wood floor joists over a crawl space and wood frame construction. This makes part of the building 75 years old.
- Since the current building is centrally located on the site, additions would be to several different locations of the building, likely resulting in higher per-square-foot construction costs.
- The 1979 court additions were designed and constructed with load-bearing masonry walls on all four walls of the two-story stacked courtrooms. While openings can be cut to accommodate circulation, a good portion of these walls need to remain intact, which limits floor plan flexibility for the renovation and subsequent modifications.
- Constructing the parking deck while working around the existing building creates some logistical challenges and increased cost of construction.
- Because of the configuration of the existing parking lot and building, fitting the 313 or 330 spaces identified as a target for the site requires ramps and extra levels of parking, reducing the efficiency of the structure. To accommodate the ramps, the parking gets very close to the building and impacts views and daylighting on the south side. The odd-shaped parking area does not lend itself to an efficient parking garage layout. The parking structure would need to wrap around two sides of the site.
- There is no compelling historic or architectural significance to the existing building.

**Option 3A: Demolish the existing building, construct new building on site designed specifically for the County’s use, with no community services department, and construct a two-level parking deck with 329 spaces (pages III-20 to -22 for conceptual graphic details).**

*Pros*

- An all “new” building with state-of-the-art mechanical/electrical/plumbing systems, special systems, structure, durable finish materials.
- Building can be located on site to accommodate future building expansion.
- A fully code compliant, ADA accessible, energy efficient, daylighted, contemporary work environment.
- No inherited limitations of the existing building in regards to layout, structure, mechanical, electrical, and plumbing systems or limitations of a building that has exceeded its life span and has structural limitations.
- There is no compelling historic or architectural significance regarding demolition of the existing building.
- A more efficient layout for county agencies, including Community Services.
- A simplified, efficient parking deck solution with secure and covered employee and fleet parking on the lower deck entered from Griffin Street and a public parking level on Grant Street upper deck. Not having to work around an existing building results in a lower cost-per-space for parking.
- An opportunity for the county to construct an expression of efficient service delivery in an edifice which conveys the county’s commitment to excellence. The street level presence will be a building and associated site development and landscaping that fits into the existing context of a new large scale development instead of a site dominated by a parking structure on two sides.
- Keeping the county administrative functions downtown will maintain the viability of the city/downtown for the citizens of Santa Fe.

*Cons*

- May have a more rigorous review process by the City of Santa Fe for Historic Design (height and massing).
- May have some community push back for not re-using an existing building.
- An all new building will include the demolition of the existing building which is less sustainable than renovation of the existing building, but will provide a building of longer life (see also LEED analysis).

**Option 3B: Demolish the existing building, construct new building on site designed specifically for the County’s use, includes community services department, and construct a two-level parking deck with 329 spaces (pages III-23 to -26 for conceptual graphic details).**

*Pros*

- An all “new” building with state-of-the-art mechanical/electrical/plumbing systems, special systems, structure, durable finish materials.
- A fully code compliant, ADA accessible, energy efficient, daylighted, contemporary work environment.
- No inherited limitations of the existing building in regards to layout, structure, mechanical, electrical, and plumbing systems or limitations of a building that has exceeded its life span and has structural limitations.
- There is no compelling historic or architectural significance regarding demolition of the existing building.
- A more efficient layout for county agencies, including Community Services.
- A simplified, efficient parking deck solution with secure and covered employee and fleet parking on the lower deck entered from Griffin Street and a public parking level on Grant Street upper deck. Not having to work around an existing building results in a lower cost-per-space for parking.
- An opportunity for the county to construct an expression of efficient service delivery in an edifice which conveys the county’s commitment to excellence. The street level presence will be a building and associated site development and landscaping that fits into the existing context of a new large scale development instead of a site dominated by a parking structure on two sides.
- Vertical circulation can be better accommodated in new construction than a renovation.
- Excess space could accommodate office, retail, or other socially and culturally advantageous tenants – i.e. “artist incubator space” – until the county needs the space.
- New construction would better accommodate retail or other leased space.
- Keeping the county administrative functions downtown will maintain the viability of the city/downtown for the citizens of Santa Fe.

*Cons*

- May have a more rigorous review process by the City of Santa Fe for Historic Design (height and massing).
- May have some community push back for not re-using an existing building.
- An all new building will include the demolition of the existing building, which is less sustainable than renovation of the existing building, but will provide a building of longer life (see also LEED analysis).

**Option 4: Sell the existing building, construct new building on a remote site that includes consolidated County Administration and County Commission, and construct 425 surface parking spaces.**

*Pros*

- Provides a one-stop shop for all county administrative and commission activities.
- All parking can be accommodated on a surface parking lot, significantly reducing the cost per space.
- Provides an all “new” building with state-of-the-art mechanical/electrical/plumbing systems, special systems, structure, durable finish materials.
- A fully code compliant, ADA accessible, energy efficient, daylighted, contemporary work environment.

*Cons*

- A new building on a remote site will abandon the current county administration and relocate commission functions from the downtown. This may raise potential community concern due to county functions leaving downtown.
- A site will have to be purchased.
- County will vacate four buildings in Santa Fe that will need to be sold.

**Recommendation**

Studio Southwest Architects and our consulting team have evaluated many options to accommodate the Santa Fe County administrative space/parking/and functional needs. Our recommendation is for **Option 3A** - to demolish the existing building and create a downtown campus consisting of a new County Administrative Complex on the site of the Old Judicial Complex and subsequently renovate the 102 Grant county building as part of this project.

This recommendation is based on the pros and cons as stated in the options analysis. The primary factors leading to this recommendation include the following:

- While the existing OJC is a viable candidate for renovation, there are many issues which result in a compromised facility for long term county use.
- A new building on the OJC site will provide the most efficient design for county functional needs.
- A new building on the OJC site will provide the most efficient parking option.
- **A new county administration building on the site will maintain Santa Fe County’s presence downtown and help ensure the economic vitality of Santa Fe.**

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## **IV. SUSTAINABILITY**

- A. Pros and Cons of Reuse Existing Building
- B. Sustainability Targets and Methodologies
- C. LEED Costs

The team evaluated the pros and cons of reuse/refurbishing the existing building versus a new building on the site. Sustainability targets and methodologies for the existing or new building were evaluated.

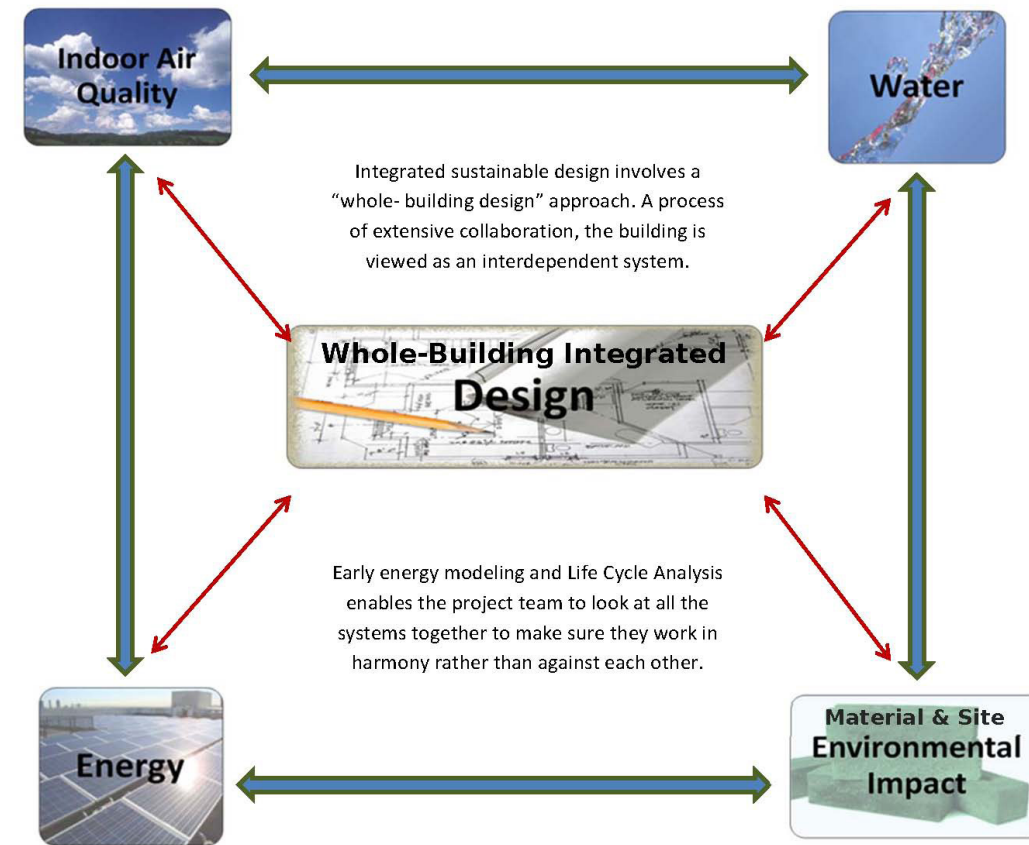
All options will require new mechanical and electrical renovations using the available space for these systems. Santa Fe, New Mexico's climate conditions are such that "free cooling" utilizing economizers can be used in lieu of mechanical cooling for most of the year. This building will be in the cooling mode the entire year.

Option 3A and 3B present the most functional and efficient layout of space and departments resulting in the most cost-effective approach for a healthy energy efficient building.



### Halcom Consulting LLC

Santa Fe Old Judicial Complex Sustainability			
Reuse/Refurbish Excising Structure		New Complex on existing or new site	
PRO'S	CON'S	PRO'S	CON'S
The greenest building is one that is already built, you don't have to use environmental resources in constructing its replacement			It can take between 10 and 80 years for a new, energy-efficient building to overcome, through more efficient operations, the negative energy and climate change impacts caused in the construction process
Embodied energy is significantly less for a re-used building			
LEED gives up to 3 points for reusing the existing facility			
	Some area's will have a very difficult time achieving the code required indoor air quality with outside air alone.	Indoor Air Quality requirements will be easy to meet. e.g. outside air.	
Bypassing the wasteful process of demolition is a MAJOR environmental benefit, not only for cost but materials sent to landfills.		New construction materials are using advanced sustainable technology.	
	Existing finishes could have possible outgassing problems that are not known.	Paints and coating will be low VOC, Increases the likelihood of not having problems with chemical sensitive employee's	
	Water saving will depend on the existing system being able to use low flow fixtures.	Energy savings will be maximized due to the new envelope and systems.	
	Mechanical systems will be limited to structural and space available	New electrical and mechanical systems tailor made for the facility	
Best PR Value			Worst PR Value



#### Sustainability/LEED Recommendations

LEED (Leadership in Energy Efficient Design) is a national building design program with the goal of achieving energy efficiency in the design and construction of buildings. There are different targets for efficiency and there are costs associated with the mechanical/electrical systems and building envelope construction required to attain higher degrees of energy efficiency.

The renovation of an existing structure is one of the most "sustainable" options in building construction due to the "recycling" of existing building elements, construction materials, and reduced manpower required compared to constructing a new building.

While renovation of the Old Santa Fe Judicial Complex is an attractive option from the "sustainability" standpoint, there is a point of diminishing returns when the existing building is limited due to structural conditions/materials, flexibility, and building envelope constraints. Further, renovations that can improve sustainability are inherently limited when daylighting and new mechanical systems are incorporated in existing buildings. Also, it will be difficult to achieve optimal efficiency and functionality for the County of Santa Fe administrative functions due to the structural limitations associated with renovating a building comprised of both a 75-year-old school and 34-year-old courthouse. Conversely, new construction offers the maximum in opportunities to incorporate high-return sustainable building design and mechanical, electrical, plumbing, and lighting components.

**Therefore, the recommendation to build a new County Administration Complex (Option 3A or 3B) on the existing site will result in a higher level of energy efficiency than could be achieved in a renovation and a more functional and efficient layout of space and departments.** (See LEED analysis on page IV-6.)

## Sustainability Targets and Methodologies

The following is an approach to energy targets for new and existing buildings on the Santa Fe County Old Judicial Complex.

No dynamic thermal modeling has been conducted as part of this plan and all proposed options are based on good engineering practice rules of thumb. Further analysis and modeling will be required to fully analyze the proposed passive and MEP advised solutions to accurately determine energy savings.

The feasibility report for the Santa Fe County Old Judicial Complex identifies and evaluates sustainable opportunities for four major areas of design:

1. Passive design
2. Primary energy sources
3. Active mechanical systems
4. Water use systems

### 1. PASSIVE DESIGN

Passive building design encompasses the architectural, structural and envelope features that affect a building's response to the local microclimate. Though these features fall under architectural and structural disciplines, the envelope components affect the demands on the mechanical system and as such perform as elements of it.

Building envelopes designed for optimum energy performance reduce a building's peak heating and cooling loads, and annual energy requirements. This effect reduces the size, capital cost, and ongoing operating cost of the mechanical system. At the same time, high performance envelopes and other passive elements work with active mechanical systems to provide comfortable indoor environments. The intent is to reduce the energy demand in the building even before active systems are applied.

Energy-efficient buildings are best achieved in the early stages of design through an integrated, interdisciplinary approach. Advanced building energy modeling can aid passive feature design. Applicable features can be identified and then tested using annual building simulations that draw on local climate data and project parameters.

#### PASSIVE DESIGN ELEMENTS

##### BUILDING SHAPE AND MASSING

Building shape and massing affects energy performance and occupant comfort because the envelope surface area affects the amount of heat lost or gained through the envelope. The ratio of the envelope area to the useable floor space or volume is the compactness of the building. In climates with extreme hot and cold conditions, a more compact building will have lower rates of heat loss and gain in winter and summer, respectively, than a building which is less compact. The result is lower annual energy consumption for heating and cooling.

##### PROGRAMMING

Every building has various spaces with differing occupancy patterns, uses and temperature control requirements. The placement and location of these spaces

with respect to the building orientation is referred to as programming, and can greatly impact the building's overall energy consumption.

##### GLAZING-TO-WALL-AREA RATIO

The glazing-to-wall ratio is the proportion of transparent glazing to the total wall area of the envelope.

##### THERMAL MASS

All matter has thermal mass, however, when referring to a building; thermal "mass" generally means materials capable of absorbing, holding and gradually releasing heat (i.e. thermal energy).

##### SOLAR SHADING

External solar shading includes overhangs, blinds, louvers, trellises, or anything that blocks the sun's rays from heating the building envelope and entering the building through glazing. Interior solar shading features, typically internal blinds, are any material inside the building that is used to block the sun's rays at the perimeter. Internal shading is significantly less effective at reducing solar heat gain and thus cooling energy requirements inside the building.

##### GLAZING ASSEMBLY PARAMETERS

Glazing assemblies consist of glass, and with more than one pane of glass a void, mounted in a frame. The thermal properties of glazing assemblies vary based on the number of glass panes, as well as the properties of the void, surface coatings and frame.

##### THERMAL INSULATION

Effective thermal insulation is the most critical design parameter of the building envelope. It reduces the rate of heat loss and gain to and from the outside, expressed in terms of R-value and U-value. Minimum R-values and maximum U-values are prescribed by the ASHRAE 90.1 energy standard for buildings.

##### ROOF DESIGN FOR SOLAR COLLECTION

Solar energy collectors (thermal to generate heated water or photovoltaic to generate electricity) have optimal orientation and angles of inclination for maximum solar energy capture over the year. The optimum orientation in the northern hemisphere is south to southwest facing.

##### INTEGRATED PASSIVE DESIGN STRATEGIES

Integrated passive design strategies combine the elements above to maximize the effectiveness of passive design in offsetting the energy requirements of heating and cooling systems by reducing energy losses and taking advantage of the naturally occurring thermal processes of the building structure and its surroundings.

##### PASSIVE HEATING STRATEGIES

The consistent availability of solar energy in Santa Fe provides an opportunity for integrating passive solar heating strategies in buildings there. The passive strategies take advantage of the combined effect of several passive elements. If applied properly, passive heating strategies could significantly reduce the heating energy requirements.

The elements affecting passive solar performance were discussed in the preceding sections and have been studied with energy simulations, as discussed in the following sections. The strategies for this project include the optimization of the following passive design elements in various integrated combinations:

1. Programming and orientation
2. Solar control with external shading
3. Glazing-to-wall-area ratio
4. Thermal mass
5. Glazing assembly parameters

Thermally massive construction stores thermal energy from solar gain as well as thermal energy generated by mechanical systems, resulting in more stable internal temperatures and reduced heating energy consumption. The mass will be most effective with optimized building orientation and without the opposing radiant effect of large areas of cold glazing surface, which requires high performance glazing to provide adequate insulation. The glazing-to-wall-area ratio must balance between the benefit of allowing solar gain to enter the space while limiting the amount of heat loss through this weak link of the assembly. The combination of these features will enhance the comfort and heating performance of the buildings.

##### PASSIVE COOLING STRATEGIES

Passive cooling strategies reduce the amount of solar energy entering the space during summer and the amount of heat entering the space through ventilation air. These strategies remove heat from the building without using mechanical energy.

Passive cooling strategies include:

1. Passive evaporative cooling
2. Nocturnal cooling by natural ventilation
3. Thermal mass
4. Solar control with external shades and/or blinds

##### PASSIVE EVAPORATIVE COOLING

In the building, evaporative cooling uses heat from the spaces to convert water from a liquid to a vapor which converts the air in the space from warm and dry to cool and moist.

To cool a space by evaporative cooling, moisture must be added to an airstream. This can be achieved by drawing air across or through existing water (e.g., a water feature located within the building, a natural exterior body of water, a hydroponic living wall, etc.), providing a cooling effect to the space.

##### NOCTURNAL COOLING BY NATURAL VENTILATION

Natural ventilation overnight is encouraged to remove heat accumulated in the building mass during the day. Cooler night-time air flushes and cools the warm building structure/mass.