Fort Yuma Health Care Center

Fort Yuma Health Care Center

Admin. Building (Left)

- Built in 1850's
- Original building encapsulated in 1928 and 1953
- converted to housing and finely to offices in 1990.

In 1936, Works Progress Administration (WPA) funding was used to build a 50-bed hospital. (above)

Fort Yuma Health Care Center

Project History

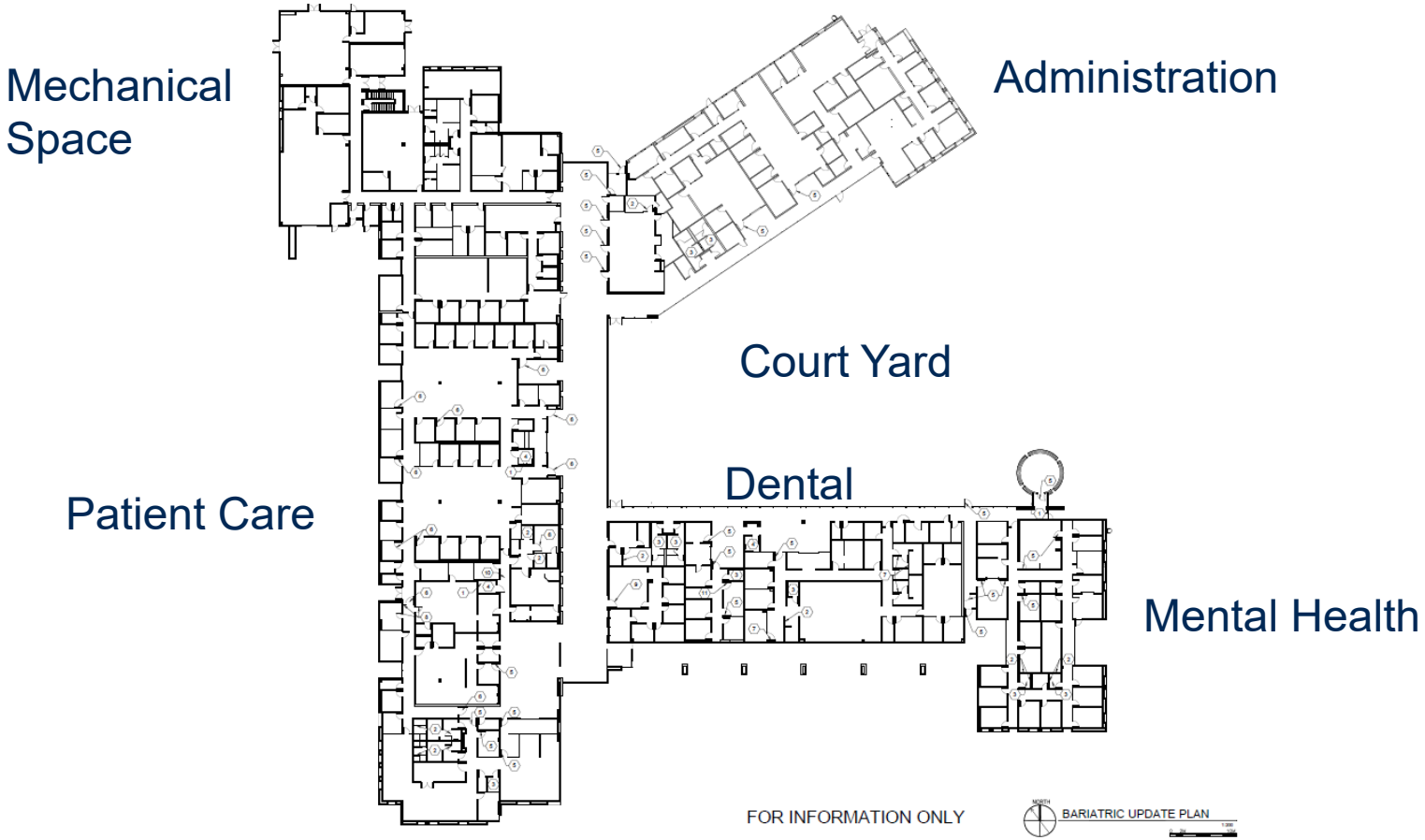
- PJD/POR approval – 7/2008
- Design completion – 4/2010
- Construction – 2/2016 to 3/2018
- Open for service – 6/2018

Fort Yuma Health Care Center

Facility Design

- Winterhaven, CA
- 76,300 sq. ft.
- Outpatient Clinic
- $48.5 Million
- 300 kW PV system
- Energy usage - 963 MWh
  Half that of similar facilities
- LEED Gold Certified
- Meets Guiding Principles

Fort Yuma Health Care Center



Fort Yuma Health Care Center

Program Benefits

- Staff hallways separated from patient hallways
- Streamlined patient flow
- Optimally placed ambulance access

Fort Yuma Health Care Center

Photovoltaic (PV) system

- provides 466 MWh annually
- 27 percent of the electrical need

Fort Yuma Health Care Center

Landscaping

- Local or climate appropriate plants
- No potable water is allowed to be used
- Irrigation water is from cooling water blowdown, a non-potable water source
- Cooling water blowdown provides up to 77,000 gal. per month max

Fort Yuma Health Care Center

Intangible Benefits

- Shaded Parking
- Natural lighting
- Welcoming atmosphere
- Low maintenance
- Ease of way finding

Fort Yuma Health Care Center

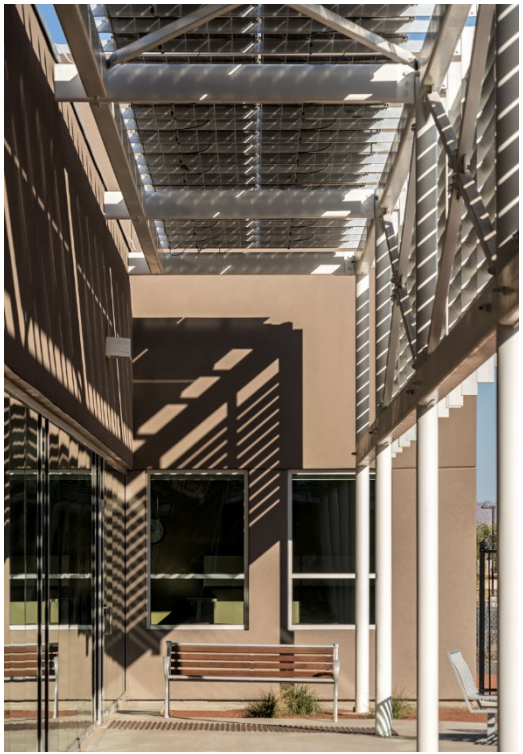
Waste Management

- Rammed earth walls
  - Native soil
  - Mixed with cement
  - Used inside and outside the building
  - Reduced use of new materials
- Recyclable material sent to local recycling centers
- Diverted 82 percent of construction waste from landfills

Fort Yuma Health Care Center

Environmental Sustainability Profile

- Energy Star Design Score - 85
- Energy Savings - $107,000 / yr.
- Water Savings – 43% compared to ASHRAE
- Waste Diversion – 82%
- Renewable Energy – 300 kW PV system
- Annual source energy use is half of the median at 155 kBtu/ft2
- 380 metric tons of carbon emissions (CO2e) annually, about half of the median building
- Storm water is directed to earthen swales for zero storm water discharge from the site for a 100 year event



Fort Yuma Health Care Center

Fort Yuma Health Care Center
Design vs. Actual

Performance Parameter	*Energy Usage (MMBtu/yr)*			Deviation (%)
	Baseline	Design	Actual	
Total Energy Usage	4972	3287	8719	165%
Photovoltaic Production	0	1694	1757	-4%
Net Energy Consumption	4972	1593	6962	337%

Other

Waste Diversion:	82%	by mass of construction waste diverted from disposal
Storm Water:	100%	retained on-site for a 100-yr storm event
Comparison to CBECS:	23%	less energy consumed than comparable facilities across the US
Energy Usage Intensity:	114.3	kBtu/SF/yr

Fort Yuma Health Care Center

Primary Issues to Resolve

- Lighting Control System Issues (many lights are on 24 hours/day in a 40 hour/week clinic),
- ¼ of the building is overcooled much of the year in order to meet the strict requirements of a medication room (RTU has to meet a cooler SAT, resulting in re-heating requirements for the rest of the spaces)
- Economizers are not performing as intended, resulting in much lower efficiency of operations

IHS Ft. Yuma Healthcare Center: Sustainability Project Profile

Building owner: Indian Health Services
Location: Winterhaven, California
Climate zone: 2B-Dry (Desert/Xeric Shrubland)
Project size: 72,000 square feet
Elevation: 207 feet above sea level
Completion date: March 2018

Energy Savings: *Estimated to save $107,000 per year for a percent savings of 61.9% when compared to the ASHRAE 90.1-2010 baseline.*

Water Savings: *The building uses no potable (drinking) water for irrigation. All irrigation will come from cooling tower (HVAC) blowdown water.*

Waste Savings: *Project diverted 82% of all construction waste (by weight) from landfills, by separating construction waste, and shipping all recyclable material to local recycling centers. This is equivalent to 248 tons or 31 eight ton truck loads diverted to the landfill.*

Sustainability Feature: *Newly installed photovoltaic system generating 300 kW, with an annual production of 466,665 kWH/year. This is equivalent to the sum of greenhouse gas emissions from 67 homes' energy use for one year in this area.*

Dekker Perich Sabatini Architects-photo courtesy of Travis Lewis

LEED® Facts

Ft. Yuma Health Care Center
Winterhaven, CA

LEED NC 2.2
Certification awarded Month/Year

Gold **39***

Innovation & Design	7 / 5
Sustainable Sites	9 / 14
Water Efficiency	4 / 5
Energy & Atmosphere	13 / 17
Materials & Resources	2 / 13
Indoor Environmental Quality	9 / 15

* Out of a possible 69 points

Certified: 26-32 pts.
Silver: 33-38 pts.
Gold: 39-51 pts.
Platinum: 52-69 pts.

Dekker Perich Sabatini Architects-photo courtesy of Travis Lewis

Design Project		Median Property**
381.6 (Metric Tons CO2e)	CO_2	774.0 (Metric Tons CO2e)
63.9 (Site EUI kBtu/ft2)		129.7 (Site EUI kBtu/ft2)
154.6 (Source EUI kBtu/ft2)		313.7 (Source EUI kBtu/ft2)
85 Score	ENERGY STAR	50 Score

Dekker Perich Sabatini Architects-photo courtesy of Travis Lewis

November 2018

Fort Yuma Health Care Center

By using a supplemental energy supply and deploying water reductions, the facility is better able to respond to future climate impacts in terms of intensifying droughts, occasional large floods, rising temperatures, and competition with agricultural irrigation demand.

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