

Cameron Airpark Estates combines old and new technology on their "Streetways"

Cameron Park Airpark is a unique residential community and airport. In 1950, Larry Cameron, a former champion rodeo rider and successful auto dealership entrepreneur, envisioned a place where residents could play golf, swim in a lake and even enjoy the benefit of their very own private airport. Mr. Cameron began his dream with the purchase of 5,000 acres of land that the trailblazer originally used for ranching purposes. Over the years, the land was slowly divided into ranch sized properties and varying other parcels designed to build medium and high-density residential neighborhoods. Eventually named, Cameron Park, the community today contains a mixture of single-family homes, apartments, large ranches, horse properties, and various businesses. It also boasts a championship golf course and country club worthy of the most challenge-starved golfer. In addition, Cameron Park has a community center and pool complex, a recreational lake that covers approximately 10-acres, and then of course the Cameron Airpark Estates.

Located approximately 20-miles east of Sacramento, Cameron Airpark Estates is made up of a diverse group of residents including airline pilots, retirees and others who commute by private plane to the San Francisco Bay area, Tahoe, Las Vegas or points unknown. The airpark homes [approximately 200] are built on 90 foot-wide street/taxiways [hence streetways], where pilots taxi their private planes from their very own over-sized garage/hangers to the 4,000 foot runway.

Over the years crack seal and other minor maintenance procedures have been utilized to maintain the approximate 1,000,000 square feet of asphalt. However, when the pavement could no longer be maintained with minor repairs, the association decided they must consider other options. Several vendors were invited and each proposed their own unique treatments and ideas ranging from sealing to complete reconstruction.

The homeowners wisely engaged the professional services of Jeff Crovitz, PE of MGE Engineering located in Sacramento, California. Crovitz reviewed the existing pavement thoroughly and determined that there were actually three separate problems. First of all, it was concluded that subsurface water was causing significant cracking and overall structural failure. It was obvious under-drains should be installed to control the flow of the multiple areas of perched ground water under the asphalt. Second the vast areas of flat pavement needed a moisture barrier to prevent water from passing through the asphalt to the base. Last MGE Engineering determined that an asphalt overlay would be necessary to increase the load bearing capacity of the pavement section. Engineer Crovitz recommended a fabric interlayer be used to mitigate future reflective cracking while creating a moisture barrier. He then designed over 1,100 lineal feet of subsurface drainage for specific areas to capture subsurface water. This drainage system had to be a very shallow system, due to the fact that there was very little elevation change to work with throughout the project. MGE Engineering's answer was to use the thin, tall geo-composite drainage system; Multi-Flow ([www. Multi-Flow.com](http://www.Multi-Flow.com)). He chose this particular drainage system, because of its ease of installation, high flow capacity, high compressive strength and overall long-term life projections.

The work was planned to start in the summer of 2008, however, the assessment was put to vote and defeated by the residents. After only one more year of pavement deterioration and distress, it was clear to the homeowners that major maintenance could be postponed no longer. The one year wait proved to be a benefit as the recession brought much lower construction costs as well as more advantageous financing. Bids went out in 2009 and estimates for the 9,000-ton project came in surprisingly low. This time the assessment passed.

Granite Construction Company (Sacramento) was the low bidder. They immediately approached the homeowners with one more money saving proposal. Granite recommended the use of Warm Mix Asphalt, which would save thousands over conventional Hot Mix Asphalt. In addition to the savings, the homeowners were enthused by the overall "green" benefits that would be realized. Warm Mix Asphalt meant that material could be mixed and installed at lower temperatures. Since reductions of as much as 50 to 100 degrees are common, the obvious benefits include: cutting fuel consumption, decreased production of greenhouse gases, better overall compaction and the ability to haul the paving mix for longer distances. This warm mix asphalt was placed on this project at temperatures from 250-260 F.

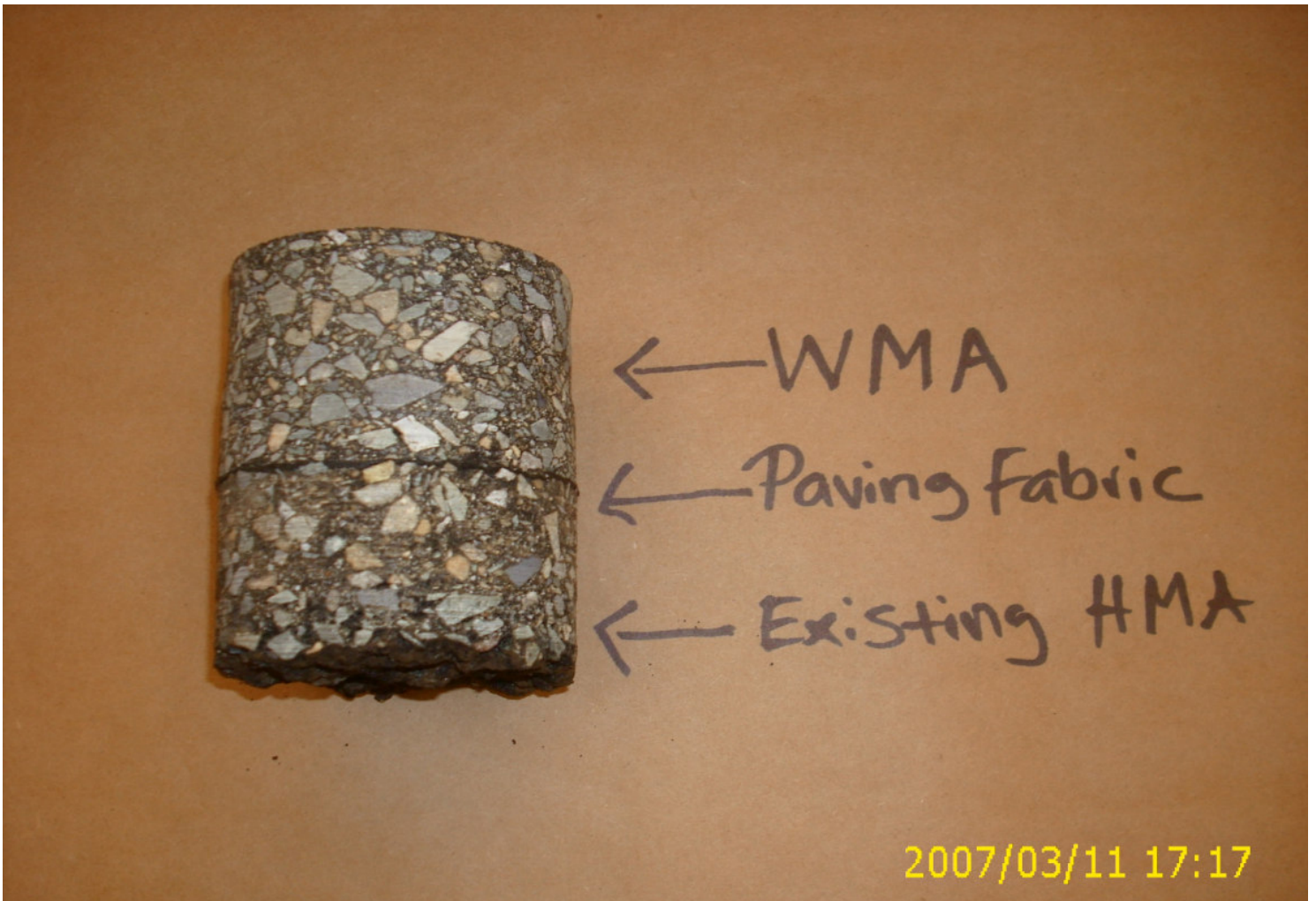
Engineer, Jeff Crovitz still was not concerned about how well the fabric interlayer would work with the lower temperature asphalt mix even though many outsiders were. Mr. Crovitz felt with close monitoring of the fabric laydown and the Warm Mix Asphalt a successful result could be achieved. Western Oil Spreading Services of Sacramento was subcontracted to install the interlayer fabric. The conventional 4.1-ounce non-woven polypropylene fabric was specified and was bonded with PG 70-10 liquid asphalt. The interlayer was installed using a truck-mounted lay-down unit. The binder was then applied at a rate in concurrence with AIA [Asphalt Interlayer Association www.aia-us.org] specifications of 0.25 gal/sy +/- 0.03.

Upon project completion Granite Construction drilled cores to verify all required aspects of the Warm Mix Asphalt had been met. They also wanted to verify competent bonding of the fabric interlayer. Dan Ridolfi, PE, and Quality Manager for Granite Construction reported the following, ***“The density of the mat averaged 97% of maximum theoretical specific gravity and laboratory examination of the cores drilled from the jobsite indicated the Paving Fabric was well bonded to both the existing asphalt and the new warm mix asphalt. Furthermore, the bond between the asphalt interlayer and warm mix was the same as we would expect with hot mix.”***

Engineer Crovitz went a step farther and removed a small section of the completed pavement section and attempted to separate the lifts. Using a 3” chisel and 2 lb. sledge, he was unable break the bond between the fabric and the AC. He said he was confident that his many years of personal asphalt construction and inspection would eliminate any potential problem. This project certainly confirmed his position. The warm mix will be sealed with a double coat fog seal in the summer of 2010.

In the end, the homeowners of Cameron Airpark Estates received a well-engineered, top quality, brand new pavement solution. Granite Construction will benefit as well, with a quality Warm Mix Asphalt showcase project under their belt. I think it is safe to say that Larry Cameron would be very proud of the airstrip that will continue to benefit his legacy for years to come.

For more information on this project, contact Granite Construction at their Sacramento office at 916-921-6195 or visit them online at www.graniteconstruction.com or Jeff Crovitz at jcrovitz@mgeeng.com. For additional information on interlayers, contact Ray Myers at the Asphalt Interlayer Association at 916-933-9140 or visit them online at www.info@aia-us.org.



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