

By Donna Boss Photos courtesy of MSU Communications

Another Leap into Foodservice Excellence for Montana State University

ontana State University's Rendezvous Dining Pavilion attracts students, staff and the Bozeman, Mont., local community to the northeast side of campus. In keeping with the MSU masterplan that calls for the replacement of old student dormitories on the edge of campus, the 50,000-square-foot pavilion serves as a new gathering place for students. "It is a handsome, functional and vibrant addition to a proud campus," says Richard Huffman, MBA, director, MSU Culinary Services.

As part of a comprehensive campus-wide dining masterplan authored in 2014, Porter Khouw Consulting (PKC) recommended the university renovate Miller residential dining facility and implement a new "anytime dining" concept. The plan also called for the renovation of the two remaining dining venues in the Hanon and Harrison residential halls.

"Even though upgrading and renovating Miller was a huge success, the project team learned that there are risks involved when a more than 50-year-old dining venue is renovated," says Albin Khouw, senior vice president, PKC.

MSU decided to forgo the planned renovation of Hannon and Harrison and instead built a new dining hall. "MSU also had to find a way to relieve the traffic pressure from Miller, especially during the lunch and dinner hours, because participation at the renovated facility skyrocketed to a level never seen before," Khouw says. Meal transactions rose from an average of 5,500 per day to 9,600 per day.

facility design project of the month

Design Solutions

A collaborative process identified program requirements for the new facility, which opened in August 2018. "The overriding theme of this new dining venue was to have a high-energy yet warm and inviting place where students can gather and experience everything that the recently renovated Miller Dining had to offer and more," Khouw says. "The project team also wanted the new dining space to be even more exciting and more operationally efficient."

Goals and priorities were identified by MSU staff leaders, the building committee and the architects during team operations workshops to identify the menu profile, methods of production for the various culinary menu offerings and style of service within each of the servery stations. The group also identified other operational criteria for the front and the back of the house that included: bulk refrigerated and freezer storage requirements, cold preparation and hot production

1. Mobile undercounter refrigerator

1a. Refrigerated bakery case 1b. Roll-in refrigerator 1c. Walk-in complex 1d. Evaporator coil 1e. Mobile reach-in refrigerator 1f. Mobile refrigerated base 1g. Mobile reach-in freezer 1h. Roll-in blast chiller/freezer 1i. Mobile undercounter display refrigerator 1j. Mobile refrigerated equipment stand 1k. Mobile refrigerated sandwich unit 11. Mobile undercounter freezer 1m. Mobile slide door undercounter refrigerator 1n. Frost top 10. Refrigerated self-service case 2. Espresso/cappuccino machine 2a. Knock box 2b. Coffee maker 2c. Coffee server 2d. Coffee maker, satellite system 3. Coffee arinder sink 4. Bottle syrup rail 4a. Syrup organizer 5. POS terminal 6. Retail service counter 6a. Front service counter 6b. Back island counter 6c. Back counter table 6d. Coffee counter 6e. 89'er Diner service counter 6f. Forge 406 service counter 6g. Beverage counter 6h. The Nook counter

6i. Rosso: Italian, pizza and pasta Counter 6j. XO: wok/stir fry counter 6k. De La Mesa: Mexican/burrito service counter 6l. Etcetera service counter 6m. Crossroads/Smoothies service counter 7. Ambient/refrigerated display case 7a. Pastry/bread display case 8. Food guard w/light 9. Cold food well 9a. Drop-in found sauce well 9b. Dipperwell 9c. Drop-in hot food well 9d. Drop-in angled cold unit 10. Crepe maker 11. Rapid bake oven 11a. Mobile triple deck oven 11b. Smoker/convection oven 11c. Ferris wheel rotisserie 11d. Mobile double convection oven 11e. Cheesemelter 12. Mobile sandwich prep table 12a. Worktable w/prep sink 12b. Worktable 12c. Baker's table w/wood top 12d. Soiled dishtable w/soak 12e. Clean dishtable 12f. Mobile worktable 12g. Mobile refrigerated pizza prep table 12h. Mobile pizza cutting table 12i. Mobile refrigerated prep 13. Drop-in prep sink 13a. Drop-in utility sink 13b. Hand sink w/foot pedal and soap/towel dispenser 13c. Pot sink

13d. Silver soak sink 13e. Pre-rinse sink 13f. Drop-in hand sink 13g. Drop-in prep sink 13h. Two-compartment sink 14. Mobile rack 14a. Can rack 14b. Dunnage rack 14c. Pot rack, ceiling mount 15. Waste receptacle 15a. Mobile waste container 16.20-qt. mixer 16a. Spiral mixer, 180 lbs. 16b. 60-qt. mixer 16c. Mixer stand 17. Roll-in proofer 18. Exhaust ventilator 18a. Grease interceptor 19. Ingredient bin 19a. Ice transport system bin w/carts 20. Dough sheeter 21. Rounder divider 22. Mobile walk-in shelving 22a. Stationary shelving unit 22b. Wall shelving 22c. Mobile shelving unit 22d. High-density shelving 22e. Heated stone shelf 22f. Wall-mounted shelving 22g. Wall-mounted pot shelving 22h. Drop-in glass heated shelf 23. Pre-rinse spray station 23a. Eye-wash station 24. Garbage disposer 25. Pot washer w/booster heater 26. Ice maker, H2O cooled, chilled H2O loop 26a. Filter system for icemaker 26b. Undercounter ice maker w/bin

the preference expressed by students and staff for quality

capacity, the bakery component, recycling and trash han-

such as offices, toilets and locker/changing rooms.

dling, and dining services administrative and staff facilities

and feel of the interior and exterior aspects of the project.

"The building's design character and materials reflect

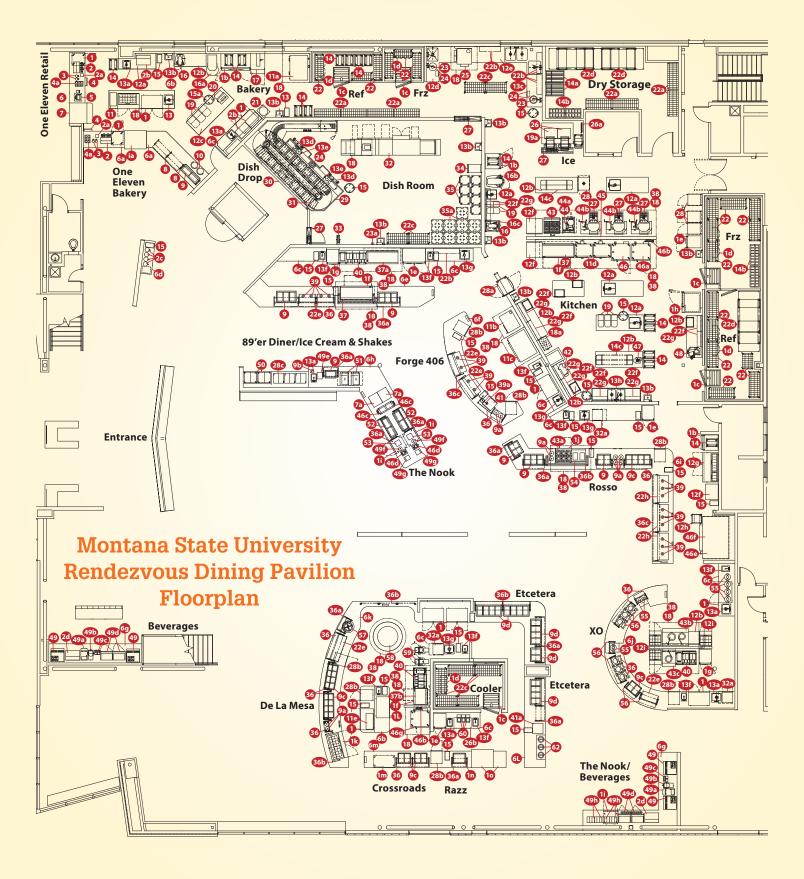
In addition, collaborative design and visioning workshops helped drive a user-focused solution to the architectural look

wood, glass and steel elements.

27. Floor trough 28. Mobile warming and holding cabinet 28a, Pass-through stacked hot holding/display cabinet 28b. Mobile undercounter heated cabinet 28c. Ice cream dipping cabinet 29. Tray conveyor 30. Pass-through window ledge 31. Sight and sound baffel 32. Flight-type dishwasher w/booster heater 32a. Undercounter warewasher booster heater 33. Hose reel 34. Mobile utility cart 35. Rack dolly 35a. Dish dolly 36. Food guard w/light and heat 36a. Food guard w/light 36b. Food guard partition 36c. Food guard 37. Counter griddle 37a. Griddle w/stand 37b. 36-inch counter griddle 38. Fire extinguishing system 39. Hanging heat lamp 39a. Portable counter heat lamp w/base 40. Mobile fryer battery w/heated dump 41. Carving board 41a. Cutting board, bread display 42. Buffalo chopper 43. 6-burner range 43a. Step-up counter range 43b. 2-hole wok range 43c. 1-hole wok range

44. 20-qt. tilt counter kettle 44a. Tilt skillet stand 44b. 40-gal. tilt kettle 45. S/s angled low wall cap 46. Mobile single combi oven 46a. Mobile double combi oven 46b. Filter system, combi oven 46c. Conveyor toaster 46d. Waffle baker 46e. Stone hearth oven 46f. Vent duct 46a. Mobile single combi-oven 47. Food processor 48. Automatic slicer 49. Soda and ice dispenser 49a. Juice dispenser 49b. Iced tea brewer/dispenser 49c. Drop-in glass water filler station 49d. Double milk dispenser 49e. Ice cream cone dispenser 49f. Syrup warmer/dispenser 49g. Batter dispenser 49h. Triple cereal dispenser 50. Novelty ice cream merchandiser 51. Milkshake machine 52. Drop-in refrigerated cold pan 53. Peanut butter machine 54. Pasta cooker 55. Rice cooker/warmer 56. Drop-in wok induction warmer 57. Drop-in rotating cold pan 58. Rotating tortilla grill 59. Tortilla press, heated 60. Blender w/cover 61. Undercounter ice cream maker w/bin

62. Soup kettle





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materials such as wood, glass, steel and masonry handled in a contemporary fashion," adds Jeff Downhour, AIA, NCARB, principal, Mosaic Architecture. "Weathered Corten panels provide a rustic counterpoint to the sweeping brick volumes and generous swaths of glass. An upswept plank soffit emerges from the glazed mezzanine, providing a lantern-like glow to the surrounding campus."

Inflections in the building's exterior respond to visual alignment of the Bridger Mountains to the northeast and historic Montana Hall to the south. Mezzanine seating, in

- **Opened:** August 13, 2018
- Scope of Project: The new residential dining venue replaces the existing Hannon and Harrison dining halls. The space features eight serveries, indoor and outdoor seating and a full-service kitchen.
- **Size:** 50,000 sq. ft., including a mezzanine and basement with offices and support spaces
- Seats: Approximately 830, including 100 outdoor seats
- Average Check: \$10
- Daily Transactions/Covers: 6,000
- Hours: 7 a.m. to 7 p.m.
- Menu Specialties: Themed concepts include: One Eleven (bakery, espresso, crepes); The Nook (breakfast bar and beverages), Razz (smoothies), Forge 406 (smoker and rotisserie); 89'er Diner (burgers and milkshakes); Etcetera (soups, salads, sandwiches); XO (regional cuisine, wok, pho); De La Mesa (Mexican, burrito bar, build-you-own burrito); Soups; Crossroads (vegan, vegetarian, gluten-free, dairy-free); Rosso (pizza and pasta).
- Staff: 281 employees
- Total Project Cost: \$19.5 million
- Equipment Investment: Approximately \$1.8 million
- Website: www.montana.edu/culinaryservices

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particular, benefits from dramatic views to these landmarks. "The animating idea of the design is that of the pavilion (hence the name!), with a sense of open sides under a wide, beckoning roof," says Matt Aune, AIA, NCARB, project architect at Mosaic Architecture.

Within the pavilion's crisp, angular shell, the interior creates a sense of a marketplace. Each of the eight serveries expresses a distinct, colorful, visual character suiting the cuisines staff prepare in these venues. "They are arranged in an organic fashion while subtly managing the traffic flow," Aune says.

Uniquely themed action stations include: One Eleven (retail bakery, espresso, crepes); The Nook (breakfast bar and beverages), Razz (smoothies and hand-dipped ice cream), Forge 406 (smoker and rotisserie); 89'er Diner (burgers and milkshakes); Etcetera (soups, salads, sandwiches); XO (regional cuisine, wok, pho); De La Mesa (Mexican, burrito bar, buildyou-own burrito); Crossroads (vegan, vegetarian, gluten-free and dairy-free); and Rosso (pizza and pasta). Each station contains equipment so culinary staff can prepare and cook in full view of customers. "PKC collaborated closely with members of the MSU Culinary Services team to design multiple themed stations that combine exhibition cooking platforms with the more traditional serving stations," Khouw says.

Customers can access a retail servery featuring coffee

drinks and fresh baked goods both from within and outside of the main dining hall. This design allows the retail servery to operate outside of the dining hall's hours. The dining pavilion's 700 seats include active areas that encourage students to interact with one another. Ample seating areas also support those who want to study or prefer privacy.

A covered outdoor terrace on the mezzanine also offers seating to those who want to take advantage of the beautiful views offered at MSU. A full basement contains offices and support spaces, including cold and ambient storage.

Back-of-House Deliveries and Production

"Having the right foodservice program and ensuring functional adjacencies are properly identified can make a difference between a successful and not-so-successful project," Khouw says. "It is critical to define proper spatial adjacencies in the kitchen as it relates to traffic and product flow."

Bulk refrigerated, frozen and dry storage sit close to where staff receive and stage products. "In this project, there is a logical path for raw product to be staged and stored immediately upon delivery," Khouw says. "Cold preparation space is close in proximity to bulk storage. The main hot production zones are also programmed to have easy access to refrigerated storage, which is dedicated to hold day inventory."



Main aisleways throughout the kitchen provide general circulation. Major preparation and production centers sit perpendicular to the main travel path. "Once we clearly defined travel paths, we identified placement of the various preparation and production centers in conjunction with washing and sanitizing elements such as the scullery and dish room. On this project, the clockwise flow from the point of receiving to hot production is further enhanced by having direct access to the servery where finished goods are served," says Khouw.

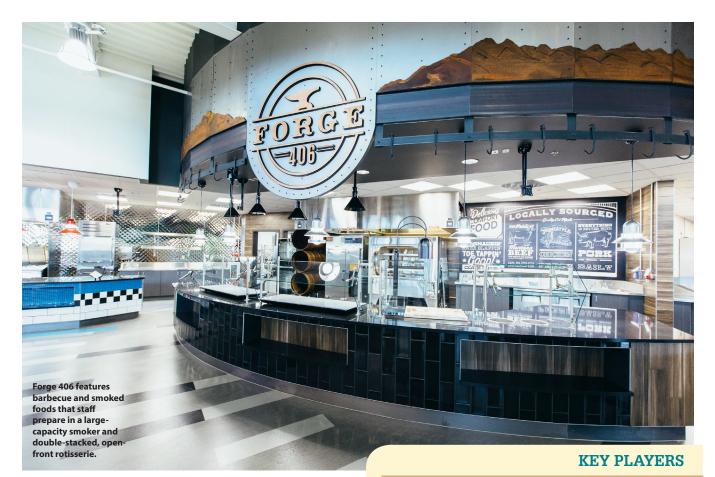
Guests have a limited view into the kitchen; however the project team purposely allowed a large portion of the bakery to be in full view of customers. "Visual stimulation plays an important part in today's dining operation and we capitalized on this opportunity to showcase some back-of-the-house operation," says Khouw.

The dish room is also central to the overall operation. "Having direct access to the dish room is a huge benefit since many of the smallwares used in the kitchen are processed through the dishmachine," Khouw says. "Typically, we like to locate the dish drop window close to the path of egress so that customers can drop off their dishes on the way out. Not only were we able to achieve this goal but it was also our desire to have direct access to the dish room from the kitchen. Knowing that the dish drop window can be unsightly, it is also in our best interest to conceal this area from view as you enter the servery. Working in close collaboration with Mosaic, we placed the elevator going to the mezzanine deck









in front of the dish drop area, which provided just enough of a barrier to screen off the dish drop area."

Back-of-the-House Deliveries and Production

When food arrives at the loading dock, staff load about 60 percent of it onto an elevator and take it to the basement level's walk-in cooler. Proteins, vegetables and dairy go in designated sections of the cooler. There is also a walk-in freezer and two dry storerooms on the basement level, along with a laundry room, employee restrooms and employee lockers.

Staff also take food deliveries to a small walk-in cooler, walkin freezer and other cold and dry storage areas on the main level. The storage area on this level also supports a pantry that food cooks regularly access for items such as spices, flour, sugar and canned goods. "We also store alcohol here in ambient temperature, locked cages," says Jill Flores, executive chef.

Cooks access the stored food as necessary and transport it to prep stations.

In the cold prep area, one counter holds a vegetable slicer, meat grinder, saucer, buffalo chopper and can opener. Large prep equipment in the other half of the prep kitchen includes a 60-quart and a 20-quart mixer for making mashed potatoes and pancake batter, a 6-burner range, 20-quart tilt kettle, a tilt skillet and a pair of 40-gallon tilt kettles for making sausage gravy, alfredo and marinara sauces, along with

- **Owner**: Montana State University, Bozeman, Mont.
- Director, MSU Culinary Services: Richard Huffman, MBA; Todd Jutila (now retired)
- Associate Director, MSU Culinary Services Dining Halls: Michael Kosevich
- Operations Manager: Paul Mineau
- Executive Chef: Jill Eva Flores
- Architect: Mosaic Architecture, Helena, Mont.: Jeff Downhour, AIA, NCARB, principal; Matt Aune, ALA, NCARB, project architect
- Interior Design: Mosaic Architecture; Matt Aune, ALA, NCARB; Eleven Eleven Design Studio LLC, Bozeman, Mont.: Kelly Livingston, partner and principal; and Prime-Incorporated, Bozeman, Mont.: Jason Johnson, creative director for signage and branding design
- Foodservice Consultants: Porter Khouw Consulting Inc., Crofton, Maryland: David Porter, FCSI, president and CEO; Albin Khouw, senior vice president of design and operations; Cezanne Grawehr, executive vice president; Carolyn Watkins, business development; Russell Vaughan, senior design project manager
- Equipment Dealer: TriMark Gill Group, Hamilton, Mont.: Mike Giuliani
- **Construction**: Langlas & Associates, Bozeman, Mont.

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grits, refried beans, taco meat and other meat for sloppy Joes.

The bakery supports One Eleven, the retail bakery cafe. Staff at One Eleven use a 20-quart mixer, a large spiral mixer, a dough sheeter, a roll-in proofer, ingredient bins and a deck oven to prepare all the cookies, cakes and pastries for the center.

Front-of-the-House Themed Concepts

Most front-of-the-house stations contain small refrigerators and freezers, plus hot holding cabinets. "A lot of effort was also directed toward signage and theming opportunities at each station," Aune says. "Mosaic engaged a local shop to fabricate custom-designed signage including wall and hood surrounds."

Forge 406 features barbecue and smoked foods that staff prepare in a large-capacity smoker and double-stacked, openfront rotisserie that rotates like a Ferris wheel and serves as a visual showpiece. Staff use a griddle, three combi ovens and two convection ovens to support the menu, which includes lasagna, ravioli and vegetables, steamship roasts, prime rib and vegetables. Staff use a chrome-top grill to make scrambled eggs and sausages in the morning and tofu and other grilled items for later meal service. Hot stones display several menu items. A stone-topped hot warming unit displays several menu items. In addition, two hot wells hold sausage gravy, oatmeal, hash browns, bacon, scrambled eggs and grits.

The 89'er Diner contains three fryers that staff use to make french fries, chicken wings, mini tacos and other appetizers. Staff also use two chrome flattops to cook burgers, marinated chicken and a hotdog or sausage of the day. A cold well holds burger toppings. In the morning staff cook french toast, pancakes, sausage patties and made-to-order omelets on the flattops. A cold well holds omelet ingredients. Freezer drawers sitting beneath the flattops and another upright freezer hold ingredients for the diner. Across an aisle, the 89'er Diner station also contains two milkshake machines, an ice cream cabinet with cold wells holding 16 hard ice cream flavors and a refrigerated ice cream novelty cabinet.

At Rosso, customers can help themselves to hot pasta and sauces held in bain maries or request special orders. Staff use a two-bank pasta rethermalizer and six-burner step-up range to cook these pasta dishes. A cold well holds ingredients for build-your-own salads.

Rosso's pizza station contains a pizza prep table with refrigerated drawers beneath. Staff cook pies with ingredients such as roasted garlic and mushrooms in a stone hearth oven. Each day the station features cheese, pepperoni, meat and veggie pizzas. In addition, the oven heats lasagna, calzones and individual casseroles.

"I appreciate the operation's variety of equipment that allows us to do action cooking for customers," Flores says. "This gives us more opportunities than we've ever had to interact with customers."





XO features three large gas-fired woks for batch cooking menu items such as sweet and sour chicken, Korean barbecue pork, garlic noodles, sesame noodles and sweet and sour veggies. Staff also prepare Middle Eastern dishes such as lamb korma, butternut squash curry and red beets with feta cheese. Staff use a single wok range with six small induction woks to prepare made-to-order specialty stir fry dishes.

Culinary staff members also prepare jasmine and brown

rice in two rice cookers and appetizers including dim sum, egg rolls and potstickers in two bank fryers. A hot stone display unit showcases the items. A two-unit hot well holds pho broths, noodles, grilled meats and sauteed veggies that customers combine into noodle bowls.

Etcetera, designed in an island shape, features four large, drop-in cold units for displaying salad and sandwich bar ingredients. The area also contains three soup kettles and an open-faced refrigerated unit that holds fruit. Staff use a double-stacked, reach-in refrigerator to store ingredients for making

smoothies in high-speed blenders. Four hot wells display vegetarian menu items. A reach-in cooler holds menu items for customers on special diets.

The adjacent Crossroads station offers restricted diet menu items such as vegan entrees and sides, gluten-free entrees, cereal and waffle batter, and almond milk. Another popular station, Razz, features blender-mixed smoothies.

De La Mesa features two heated tortilla presses for staff





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MEET THE PLAYERS

Matt Aune, AIA, NCARB, project architect, Mosaic Architecture. Before joining Mosaic in 2013, Aune worked for Fentress Architects in Denver. Projects at Mosaic include Big Spring Brewing in Lewistown, Mont., and Whitefish City Hall in Whitefish, Mont.



Jeff Downhour, AIA, NCARB, principal, Mosaic Architecture. During his 20-year career, Downhour's projects span from residential design to entire campus master planning. He incorporates his passion for sustainable design into Mosaic projects, including Northwestern Energy General Office

Building in Butte, Mont., and Montana State Fund in Helena, Mont.



Jill Eva Flores, executive chef, residential dining halls, MSU Culinary Services. Joining MSU Culinary Services 10 years ago, Flores served as chef de cuisine at Miller Dining Hall and became executive chef in June 2018 and participated in the opening of Rendezvous Pavilion.



Richard Huffman, MBA, Director, MSU Culinary Services. Huffman arrived at MSU two years ago, shortly after ground breaking for the Rendezvous Dining Pavilion. His prior experience includes 14 years in hospital foodservice and 13 years in airline catering.



Albin Khouw, senior vice president, principal-in-charge, Porter Khouw Consulting Inc. Khouw's career designing commercial kitchens and serveries spans 35 years. Before joining this firm in 2003, he served as vice president of design at Cini-Little International in Germantown, Md., and project coordinator for EPCOT Center Walt Disney World.



Michael Kosevich, associate director, MSU Culinary Services. After starting in foodservice as a dishwasher, Kosevich's foodservice career led him to Germany to manage the ski resort and golf course dining areas at an Armed Forces Recreation Center. He joined the MSU team in 1994.



Russell Vaughn, CFSP, senior design project manager, Porter Khouw Consulting Inc. Vaughn started his career as a restaurant bartender and general manager. He then became a managing partner of Jacobs Restaurant Group before transitioning to a career in foodservice design

project management. He joined PKC in 2014.

to prepare flour tortilla dough that they cook on a rotating tortilla grill. Ingredient options for custom burritos include tofu and shrimp cooked on a flattop griddle. Additional burrito-filler ingredients sit in a four-unit steam well, such as chicken and pork carnitas, beef Barbacoa, house-made refried beans, black beans, veggies with ancho chili and other vegan options. A cold unit and lazy Susan hold house-made guacamole, pico de gallo and other traditional toppers. The station also includes a nacho cheese machine. A walk-in cooler and three hot holding cabinets support this station.

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Green Project Features

The building is on track to achieve LEED Silver certification. Strategies include passive solar design, with transpired solar collectors lining the south wall to preheat outside air. Other features include a roof structured for future photovoltaic panels, and LED lighting used throughout the building.

All exhaust hoods include a variable demand control system, which allows modulation of exhaust and make-up air fan speed based on usage. "This will save an enormous amount of energy especially during slow period of the day when there is a reduced level of activity," Khouw says.

Rendezvous Dining Pavilion demonstrates the value of taking a leap into the future whenever the opportunity arises. **FE&S**



VENTLESS HOODS | PANINI AND GRIDDLES | OVENS | CREPES & WAFFLES | TOASTER & FINISHING OVENS | DISPLAYS | INDUCTION COOKERS | SPECIALTY EQUIPMENT