CASE STUDY | COMMERCIAL

CATEGORY | RESTAURANTS AND CAFE

Smith & Wollensky John Adam Street

Daikin helps high-end steakhouse serve full flavour – and comfort

Behind-the-scenes refrigeration and air conditioning systems from Daikin UK are helping high-end US steakhouse chain Smith & Wollensky deliver its unique blend of flavour and service in central London – its first site outside America.

Smith & Wollensky – the names were randomly picked from a phone book – has enjoyed consistent success over eight US sites since its founding in 1977. It opened its 360-seat, 15,000 square foot London restaurant in 2015, taking a strategic street corner of the iconic Adelphi office building on John Adam Street.

Décor inside the restaurant and the practical constraints of a Grade II listed, 1930s vintage, Art Deco office building in the heart of London presented several challenges for Daikin installer Dave Tilbury of Hampshire-based Maximum Air Conditioning.

He says: "Everything is concealed, so we have been able to deliver a subtle climate control solution. The systems are managed with a Daikin i-Touch Manager, which we monitor remotely: that's one thing less for the restaurant team to worry about."

Nathan Evans, European Director for Smith & Wollensky, says alongside an excellent menu and top-class service, air conditioning is an important contributor to the overall customer experience. "People don't relax if they aren't comfortable. Air quality and temperature are the keys to comfort."

They are also crucial for Smith & Wollensky's menu-topping specialities: dry-aged American beef, certified prime by the US Department of Agriculture (USDA).

Comfortable temperatures are assured in the restaurant's ground and lower-ground floors with a 56hp bank of five Daikin VRV III heat recovery condensing units, mounted in a well-ventilated sub-basement, two floors further down. Their output serves 19 FXSQ-type ducted fan coil units concealed in ceiling voids in public areas and four FXAQ wall-mounted fan coil units in service areas.

Also in the sub-basement plant area are two ZEAS condensing units, totalling 15hp, and a ZEAS booster unit, which supply the restaurant's refrigeration requirements – including a steady 5°C in the all-important meat ageing room.

Year of installation

› 2015

Project requirements

- [x] Air conditioning
- [ ] Air curtain
- [ ] Air purification
- [x] Control
- [x] Heating
- [ ] Hot water
- [x] Refrigeration
- [x] Ventilation

Installed systems

› VRV Heat Recovery
› Wall mount units
› Concealed ceiling units
› Zeas & Booster unit
› Ventillation units
› I-Touch Manager

Nathan Evans says: "We import between 1.5 and 3.5 tonnes of USDA prime beef every month. It comes from Nebraska, where the cattle are reared to the highest standards – without exposure to hormones or antibiotics. We dry-age the beef for 28 days under strict conditions of temperature, ventilation and hygiene. Ahead of peak periods we can have beef worth up to £100,000 in the room."

Smith & Wollensky butchers its beef on site – making it London's only steakhouse to do this with dry aged USDA prime meat. It also offers British and Irish cuts, premium seafood and other locally sourced ingredients.

The ZEAS units also serve the refrigerator room (5°C) and the wine and beer cellars (12°C). With the booster unit, they hold the freezer room at -20°C.

The restaurant is ventilated by seven VAM heat reclaim ventilation units with capacity to bring up to 13,000m^3 of tempered fresh air into the premises every hour. The VAM units' heat reclaim facility helps to minimise indoor-outdoor temperature differentials, avoiding excessive loads on the VRV units.

CO_2 sensors continuously monitor the airflow to ensure that the VAM units operate as economically as possible, delivering only the volumes of fresh air required to maintain indoor air quality.

A separate inverter controlled condensing unit is connected to a DX coil in the air handling unit that ventilates the kitchen, which is also on the lower ground floor.

The kitchen has markedly different 'hot' and 'cold' ends. The hot end is where steaks are grilled to perfection. They are cooked on a vast range capable of holding 150 at a time – a necessary facility when steak is on the menu for large private dining occasions.

Cooking at the cold end of the kitchen – where the non-steak menu choices are prepared – is entirely on induction hobs to minimise energy costs and heat wastage.

Energy efficiency is a prime ingredient of all the Daikin solutions installed at Smith & Wollensky. The ZEAS units, for example, have a better refrigeration capacity to power consumption ratio than industry standard systems – and COPs of up to 3.0. Their inverter control boosts efficiency and minimises CO_2 emissions.

ZEAS units provide an adaptable and controllable solution for all kinds of environment with fluctuating loads. Their small footprint and low sound levels offer installation flexibility – allowing larger capacities in small spaces.

Daikin VRV IV heat recovery systems are available from 8hp to 54hp with nominal heating/cooling outputs from 22.4kW to 151.2kW. As three-pipe systems they can simultaneously deliver heating and cooling to different areas – increasing the overall efficiency of the VRV system by allowing waste heat to be used to warm cool areas or for domestic hot water production.

FXSQ concealed ceiling units are available in 11 capacities, from (nominal) cooling 1.7kW and heating 1.9kW to 16kW cooling and 18kW heating.

Kit List

Code	Description	No of units
REMQ-P	VRV III condensing unit	5
FXAQ-P	Wall mounted fan coil unit	4
FXSQ-P	Concealed ceiling fan coil unit	19
ERQ-AW1	Inverter-controlled condensing unit	1
LREQ-BY1	ZEAS condensing unit	2
LCBKQ-AV19	ZEAS booster unit	1
VAM-FB	Heat reclaim ventilation units	7
DCM601A51	i-Touch Manager	1