

Harnessing the power of nature to **bring life into buildings**

SPOT ON | HVAC | NOVEMBER 2020

“The last few months have seen dramatic changes in the modern world, and perhaps this is driving us towards the implementation of new ways of doing things — including how we ventilate and heat our buildings. Natural heating and ventilation innovations are playing an increasingly important role in building designs, offering benefits to our health, our planet and the performance of our buildings.

In this Spot On, we explore the benefits of harnessing natural ventilation and cooling innovations to help fight the battle against climate change whilst still maintaining a comfortable and healthy indoor environment.”

PHILIP BARKER
HVAC SPECIALIST, OAKLINS



MARKET TRENDS (pg.2)

We review natural ventilation and heating/cooling concepts.

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MARKET TRENDS

In modern building designs, emphasis is placed on higher levels of insulation and building airtightness in order to encapsulate heat and subsequently reduce heating costs and carbon emissions. Because of the emphasis on improving building efficiency in winter, there is a greater tendency for these highly insulated buildings to overheat during the warmer months of the year. This is traditionally addressed by mechanical ventilation systems and air-conditioning technologies. As such, additional energy is expended to mechanically exchange the heat with cooler, fresh air; heat that is “wasted.”

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Market trends

Modern HVAC systems and building designs that harness natural power offer alternative means of heating and ventilating buildings, public spaces, such as schools and hospitals, and homes.

NATURAL VENTILATION

During the COVID-19 pandemic, “ventilation” has consistently been one of the many buzzwords used more often than in more normal times. When people think of ventilation, they typically think of traditional mechanical and electrical systems and rarely consider the use of natural methods for air exchange. As the name suggests, natural ventilation is the exchange of air by natural forces,

unaided by mechanical equipment. It can be broadly divided into two types: thermal buoyancy and wind cross ventilation. Thermal buoyancy occurs when cooler air enters a building and is heated by the occupants or its heating systems, thus becoming less dense and increasingly buoyant and thereby enabling fresh air to freely pass through the building. In contrast, wind ventilation makes use of prevailing winds and wind induced by the topography or microclimate in a specific location.

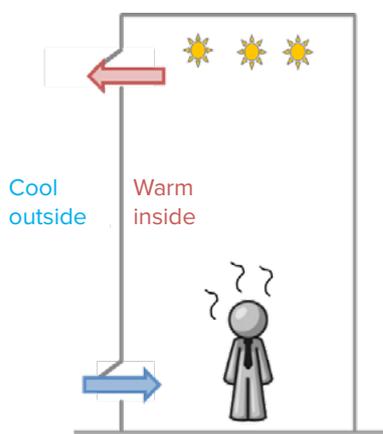
Compared with mechanical methods, there are several advantages of natural power. These include:

- providing greater ventilation rates more economically, due to the use of natural forces and large openings for air exchange

- being more energy efficient, particularly if heating is not required
- eliminating fan noise, often associated with mechanical systems, to the benefit of the occupants
- relying less on moving parts, thus overall lower wear and tear, and subsequently requiring lower levels of maintenance and servicing

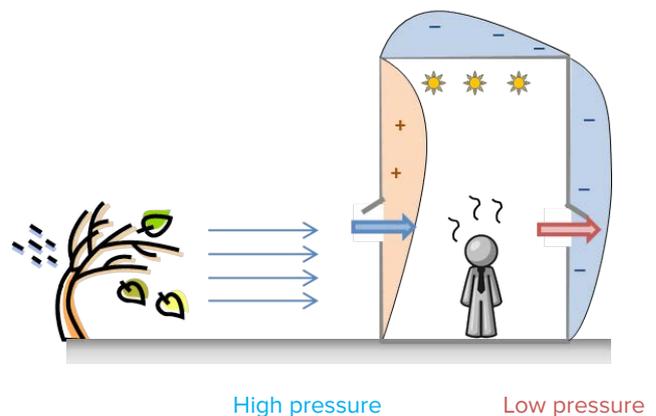
For simple passive systems, if the local temperature, need for building security and outdoor air pollution dictate that vents remain closed, there are innate challenges due to the need for high natural ventilation rates. HVAC operators have addressed some of these challenges with technological innovations that harness a hybrid approach that also utilize mechanical product characteristics.

Thermal Buoyancy



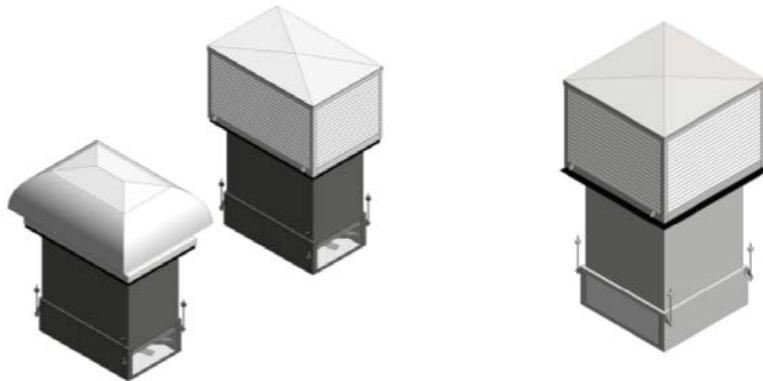
Source: CoolVent

Wind Cross Ventilation



Source: CoolVent

Breathing Buildings, a UK designer and manufacturer of ventilation systems, is a pioneer in the development of low-energy, e-stack mixing ventilation technologies. They have developed a range of intelligent e-stack mixing ventilation systems that combine elements of natural mixing ventilation in winter and natural upward displacement ventilation in summer. These analyze the external and internal environments and match the required ventilation rates by switching between operational modes, depending on season, external/internal temperature conditions and indoor air quality.



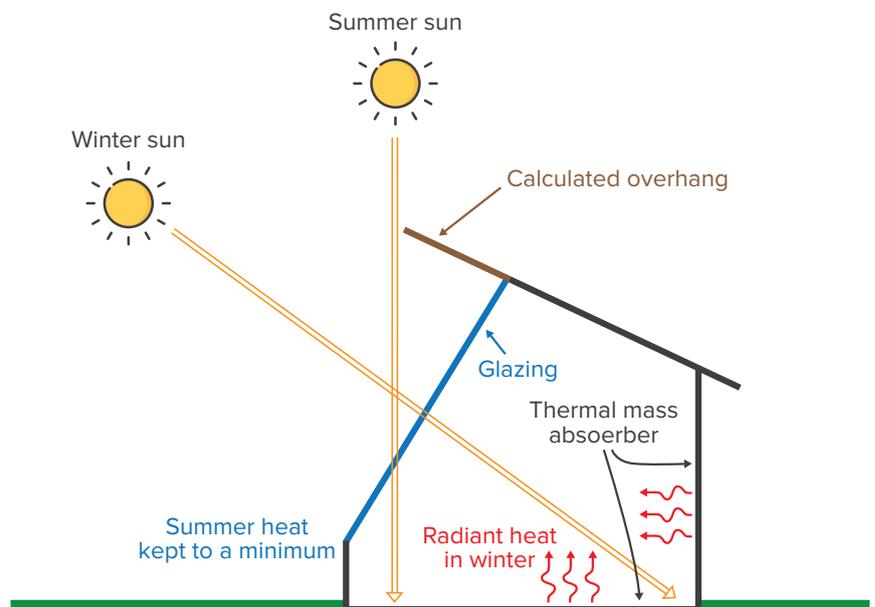
Source: Breathing Buildings

NATURAL HEATING AND COOLING

The global construction sector is expanding at a rapid rate, at which public sources consider that present-day buildings have become the third-largest consumer of fossil fuels after industry and agriculture. Consequently, the integration of proven renewable energy technologies within buildings for various applications, including heating/cooling, is increasingly promoted.

An important emerging trend is the adoption of passive solar building designs that utilize modern architecture concepts and building materials that harness sunlight without mechanical heating systems. They operate by converting sunlight into heat (in water, air and thermal mass) with minimal use of other energy sources and can subsequently heat a building in the winter months and cool it in the summer months.

Generally, in the winter months, the passive solar design allows the building to take advantage of natural heating by orienting the placement of large windows and building frames on the southern-facing side of the building so that the winter sun is absorbed by the



Source: Build. Sow. Grow.

thermal mass, which is radiated back into the building during the evening. Passive solar techniques for cooling in the summer can be built into the same structure. Examples include having solar-shading awnings over windows, which protect the building from the direct summer sun shining into the building, and orienting the windows in the direction of nighttime wind flows.

The cooler nighttime winds breeze through the building at night, cooling the thermal mass, and this helps keep it cool the next day. Sources estimate that designing and building in this way can reduce heating and cooling costs by up to 85% for some homes and buildings.



Spotlight

WE INTERVIEWED MONODRAUGHT'S CHAIRMAN, EWAN WILSON, TO DISCUSS THEIR EXPERIENCE WITH BUSINESS GROWTH FUND (BGF) AS WELL AS THEIR THOUGHTS ON THE FUTURE OF THE VENTILATION INDUSTRY IN LIGHT OF COVID-19.

VKR Holding, the owner of Velux windows, has a vision to bring daylight, fresh air and a better environment into people's everyday lives. Monodraught would seem to fit that vision rather well. So why, in June 2017, did VKR decide to divest the business to the management team after 10 years of ownership?

I agree — at one level, Monodraught's fit with VKR's vision appears good. However, VKR became increasingly focused on its daylight-related activities, whilst Monodraught saw new opportunities to expand into the wider ventilation and cooling market, building from its natural ventilation roots. In 2013, VKR took the strategic decision to sell all its ventilation activities, and this transaction completed

the divestment of VKR Group's ventilation business area. The VKR Group now comprises companies active within roof windows & skylights and vertical windows & doors.

Why did BGF decide to invest? What was the growth story they bought into?

Monodraught designs, manufactures, installs and maintains sustainable ventilation, cooling, heating and lighting systems to create low-energy, low-carbon buildings. The business works across a range of commercial and public sector markets, with a strong presence in education. Monodraught provides a holistic approach to design, including 3D building simulation analysis, to develop solutions to meet customers' specific temperature and air-quality requirements in the most sustainable and cost-effective way. Winning the Queen's Award for Innovation in 2018, Monodraught has a long history of developing and pioneering new products for the built environment and is recognized as a market leader.



As part of the growth strategy, Monodraught is focused on developing a wide portfolio of ventilation, cooling and heating products, allowing us to move beyond our natural ventilation origins and into new strategic markets. BGF has been an excellent partner for the business. They have genuinely bought into the vision, recognizing the value of the focus on sustainability at the core of the strategy and providing long-term patient capital to enable the business' plans to be realized. They have brought a fresh perspective at board level and have both challenged and supported the management team, enabling Monodraught to build our engineering and product development capabilities. We are now starting to reap the rewards of these investments, rolling out new product ranges that address new applications and new markets.

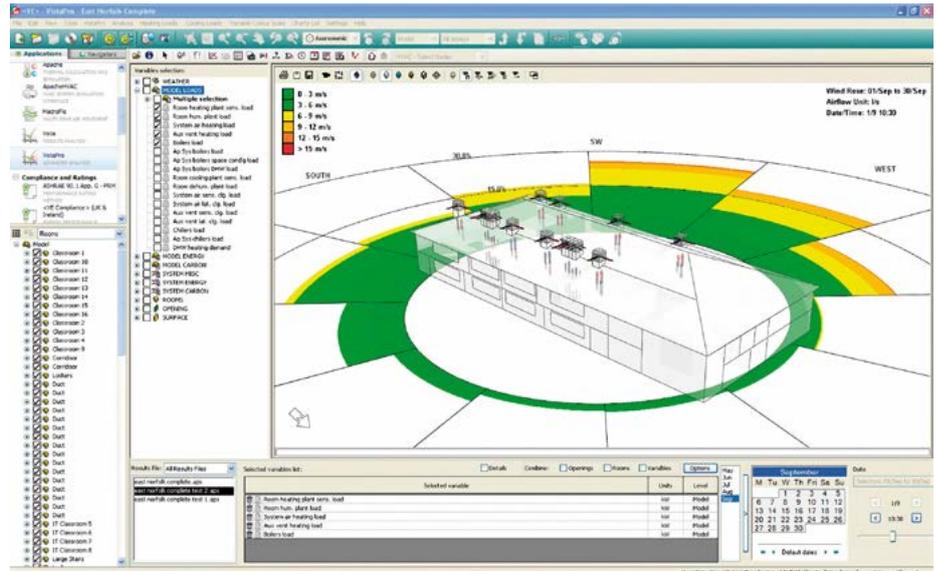
What differentiates Monodraught from its competitors?

Our technical expertise in our chosen markets together with our commitment to ongoing investment in UK engineering and product development truly distinguish us from our peers. These investments have enabled Monodraught to develop a robust portfolio of innovative products covering a range of ventilation, cooling and — increasingly — heating applications. Our customers recognize us for our quality and technology-led product offering, which fulfils our commitment to sustainability and minimizes our customers' carbon footprint. We go to great lengths to serve our customers by providing design, installation and aftermarket support services, making their lives as easy as possible.

Can you please provide us with some commentary around the key trends in the ventilation market and how the existing Monodraught product portfolio addresses these?

The immediate and obvious trend, arising from the ongoing COVID-19 pandemic, is a heightened awareness amongst building owners, occupiers and regulators of the importance of ventilation, and particularly the benefits of high fresh airflow rates in densely occupied spaces, such as offices and classrooms. At Monodraught, we have expanded our product range beyond natural ventilation to include hybrid and mechanical ventilation, to enable us to deliver high levels of air quality through the integration and control of appropriate technologies.

The other significant trend that we see is the need to reduce the carbon footprint of the built environment as the UK seeks to meet its Net Zero 2050 objectives. Increasing emphasis on a green post-COVID economic recovery as well as public opinion are also driving the search to find HVAC solutions that minimize CO₂ emissions, a significant component of

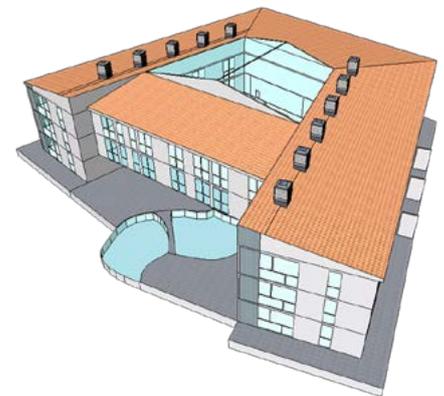


a building's operating carbon footprint. Monodraught has always been a provider of low carbon products; through our extended offering, building simulation and intelligent control systems, we are now able to provide sustainable solutions that minimize CO₂ emissions across a broad range of ventilation, cooling and heating applications.

Where do you see the key future opportunities for the business in terms of new product development and innovations and what steps is Monodraught taking to capitalize on these?

Reflecting the trends I have already outlined, we see opportunities to further integrate our technologies to provide more complete systems, enabling us to access new markets. For example, we are pioneers in the use of phase change material, with our Cool-phase product, as a means of achieving low carbon space cooling. We have a program to integrate this technology with our natural and hybrid ventilation products to provide a holistic solution to ventilation and cooling whilst minimizing CO₂ emissions.

Another interesting opportunity is the increasing availability and relevance of data. At Monodraught, we have invested



heavily in developing the control system that integrates, monitors and manages our solutions. This system includes considerable data capture and reporting, enabling the building owner or occupier to monitor and assess performance of their ventilation systems and, ultimately, the internal air quality. Through Internet of Things (IoT) technology, Monodraught is able to access this data remotely, enabling us to offer services and ongoing support to our customers.

These are just two examples of new product and service opportunities that we are exploring. As we expand further from our traditional natural ventilation roots into the wider HVAC market, with our focus on sustainability and commitment to high-quality engineering, we will continue to identify and develop new products to address our customers' emerging needs.

Image source: Monodraught

Recent M&A activity

Oaklins has identified several transactions in the global HVAC sector that completed in Q2 and Q3 2020. Private equity (PE) sees HVAC as an attractive space, in part due to the COVID-19 pandemic driving the demand for more effective and increased ventilation and filtration. As a result, a greater volume of PE deals have been completed during the period. In addition, more transactions completed in the services space, compounding the emergence of the need for increased installation and servicing of technologies to maintain safe and healthy indoor environments.

1. HEATING/REFRIGERATION

- In September 2020, **Bock Group**, a German manufacturer of piston compressors for cooling and refrigeration technology, was acquired by **NORD Holding GmbH**, a German private equity firm, for an undisclosed value.
- In August 2020, **Airxchange Inc.**, an American manufacturer of heat exchange components, was acquired by **Madison Indoor Air Solutions LLC**, an American manufacturer of heating, ventilating and air-conditioning equipment, for an undisclosed value.
- In July 2020, **MAWERA GmbH**, a German manufacturer of biomass boilers and combined power solutions, was acquired by **SAB Holding GmbH**, an Austrian investment holding company, for an undisclosed value.
- In July 2020, **Australian Valve Group Pty Ltd.**, an Australian manufacturer of heating control valves, was acquired by **Watts Water Technologies**, an American manufacturer of flow control solutions, for an undisclosed value.

2. VENTILATION

- In July 2020, **HC Groep**, a Dutch manufacturer of air treatment and ventilation systems, was acquired by **Gilde Equity**, a Dutch private equity firm, for an undisclosed value.
- In July 2020, **Metal-Era LLC**, an American manufacturer of roof ventilation solutions, was acquired by **GreyLion Capital LP**, an American private equity firm, for an undisclosed value.
- In July 2020, **Crenna Plåt AB**, a Swedish manufacturer of rectangular ventilation ducts, was acquired by **Lindab International AB**, a Swedish manufacturer of ventilation components, for an undisclosed value.

3. HVAC DISTRIBUTION AND SERVICES

- In September 2020, **American Residential Services LLC**, an American provider of air-conditioning, heating, indoor air quality and

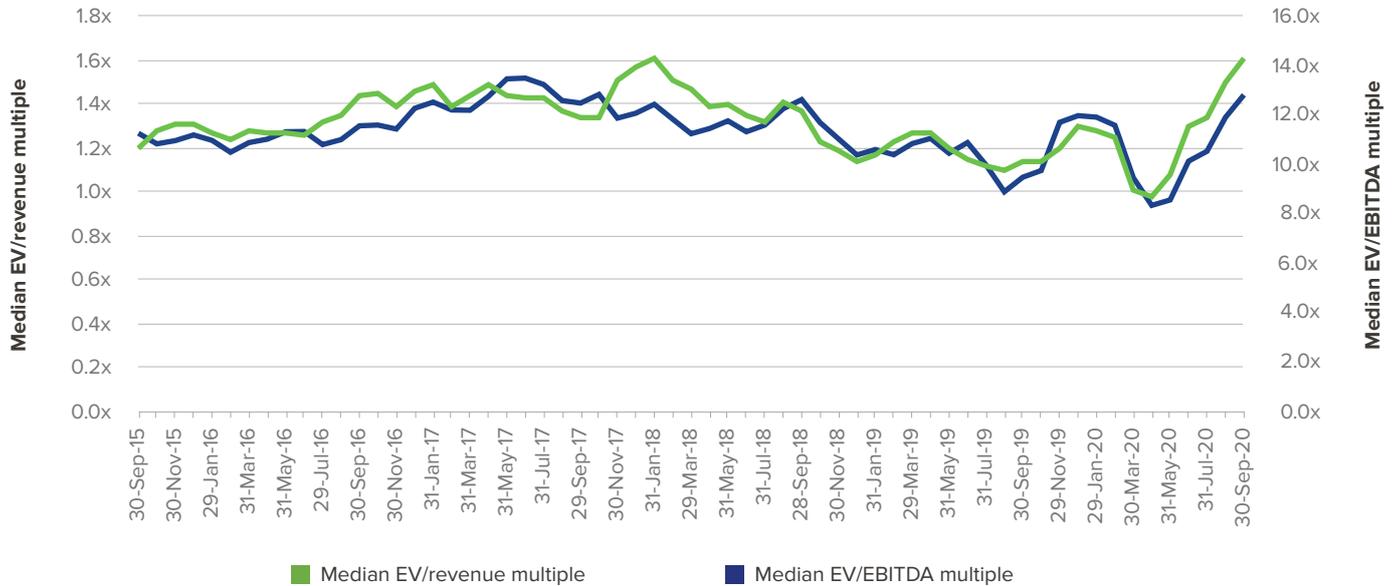
plumbing services, was acquired by **GI Partners**, an American private equity firm, for an undisclosed value.

- In September 2020, **Mascair FMI**, a UK-based installer of heating, ventilation and air-conditioning systems, was acquired by **RD Capital Partners**, a UK-based private equity firm, for an undisclosed value.
- In September 2020, **Sila Heating and Air Conditioning Inc.**, an American heating, ventilation and air-conditioning services provider, was acquired by **Astar Heating & Air LLC**, an American mechanical engineering services business, for an undisclosed value.
- In July 2020, **Bass Air Conditioning**, an American provider of recurring maintenance, repair and installation services for HVAC equipment, was acquired by **NearU**, an American mechanical engineering services business, for an undisclosed value.



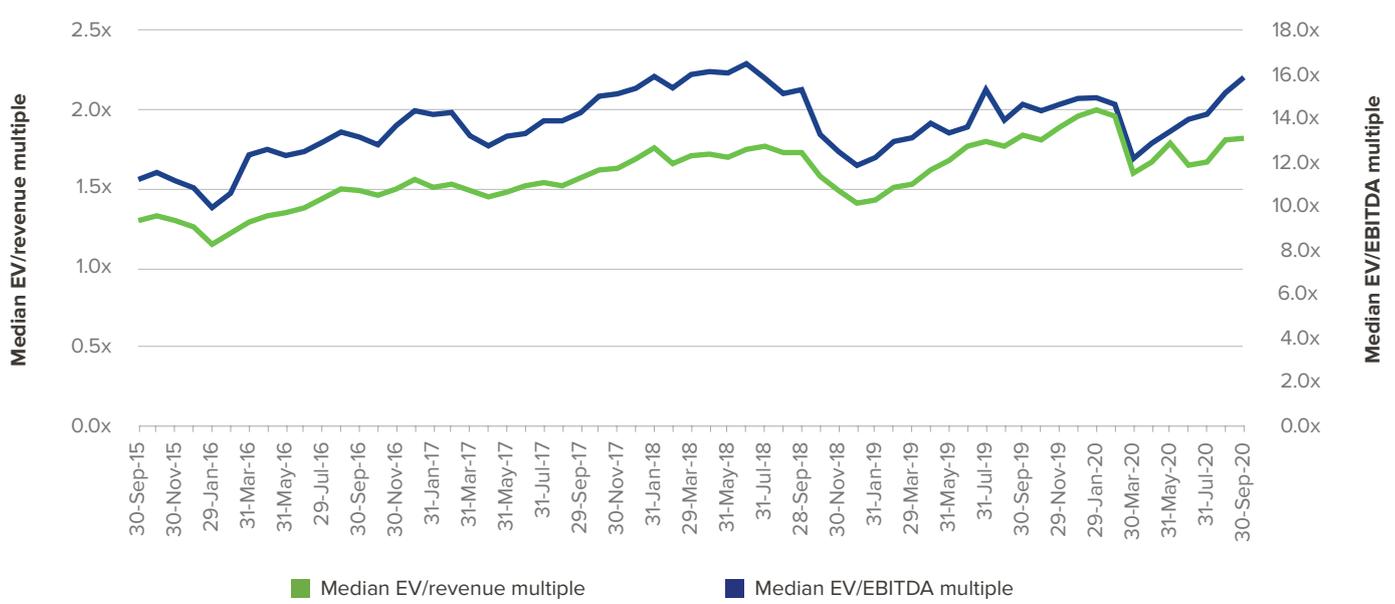
Selected public company valuation trends

EMEA HISTORIC MULTIPLES



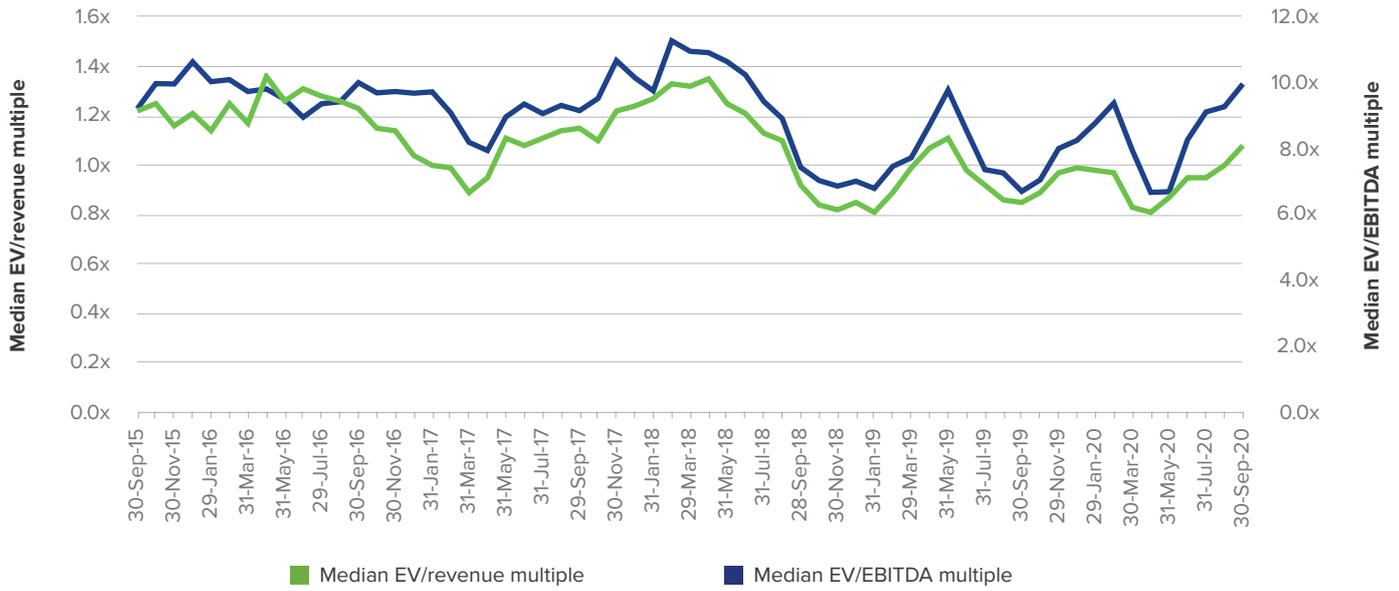
Source: Mergermarket

AMERICAS HISTORIC MULTIPLES



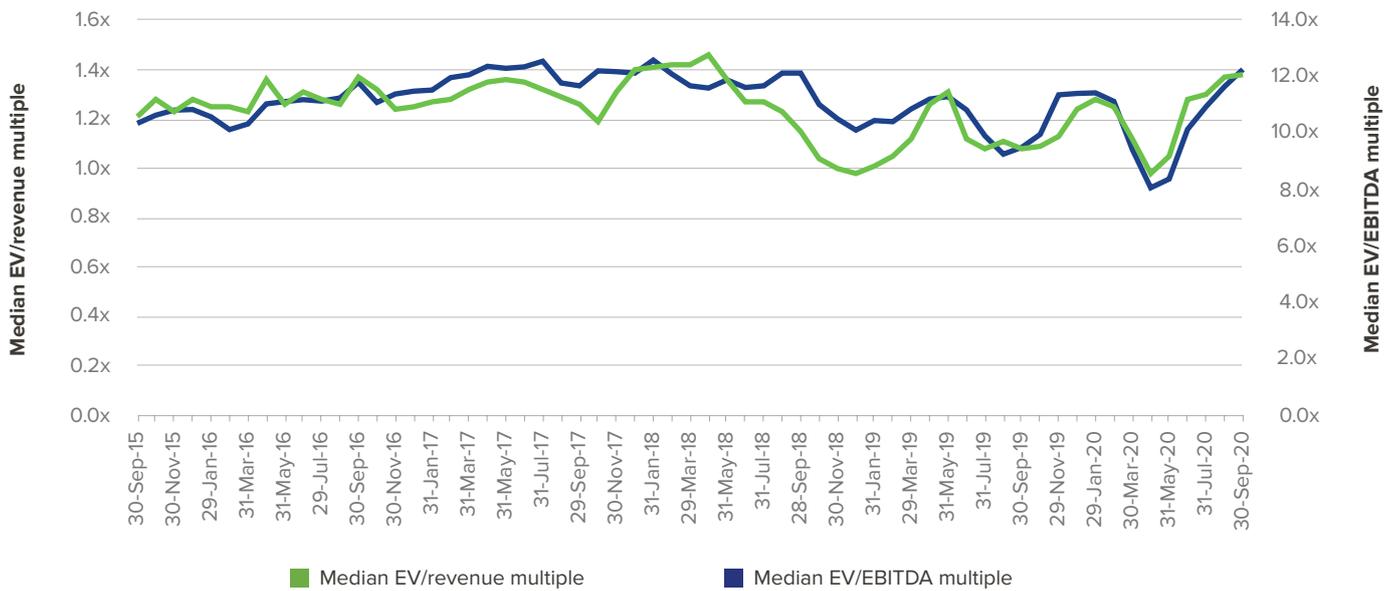
Source: Mergermarket

ASIA-PACIFIC HISTORIC MULTIPLES



Source: Mergermarket

GLOBAL HISTORIC MULTIPLES



Source: Mergermarket

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HVAC is one of our focus areas. Combining comprehensive sector knowledge with global execution has led Oaklins to become one of the most experienced M&A advisors in the HVAC sector, with a large network of relevant market players worldwide. This results in the best possible merger, acquisition and divestment opportunities for HVAC companies.

If mergers, acquisitions, or divestitures of businesses or business units are part of your strategy, we would welcome the opportunity to exchange ideas with you.

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Philip leads Oaklins' HVAC team and is a director of mergers & acquisitions and head of industrials at Oaklins Smith & Williamson, one of Oaklins' member firms in the UK. Previously, he spent 20 years as head of industrials at Oaklins Cavendish. Philip has completed over 15 sales in the HVAC sector, including assisting Oaklins Sweden on the sale of VoltAir Systems, air handling units for heat recovery in buildings, to Volution; the sale of Energy Technique, fan coils and commercial heating products, to Volution; the sale of Greenwood Air Management, ventilation and extractor fans, to Zehnder; the sale of Levolut, solar shading screens, to Alumasc; working with Oaklins Denmark to sell York Novenco, HVAC+R systems for marine and offshore, to Dania Capital; and the sale of Nuair, fans and ventilation systems, to ECI Private Equity.



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