Innovative Developments for Sterile Air Systems in Hospitals

McLeod Russel

SOLUTIONS FOR CLEAN AIR QUALITY

SOLUTIONS FOR CLEAN AIR QUALITY

The Corporation

McLeod Russel Filter GmbH is the Austrian partner for sterile air distributors and clean air components (Luwa-Filtrasept, fluff-resistor), as well as for special designs and custom-engineered parts.

We focus on manufacturing High-End solutions in the fields of

- **Health Care**
- **Pharmaceuticals**
- **Microelectronics**
- **Industry**

Coming from the Luwa Ges.m.b.H., the company is centred around the experience of longstanding research, development and production of sterile air systems, with an emphasis on the clinical field. Since early 2001, the company is a part of the McLeod Russel Holding PLC, whose headquarters are located in Great Britain.

The Competence

Being part of an international group, the Austrian McLeod Russel acts as an autonomous, powerful unit with its own research and development department.

Through the experience of several hundred projects realised just in Austria, McLeod Russel has evolved to become the clear market leader in the field of sterile air systems and clean air components.

Apart from product development, McLeod Russel Filter GmbH is especially concerned with the element of consulting for its customers in the run-up to a project, as well as for the highest standards for planning and implementation.

„When we speak about the realisation of individual customer requirements, there is no such thing as a too complex solution. We have become the largest and most experienced provider for sterile air systems in the clinical field, through the perfection of our products and of their realisation. We specifically further our leadership in know-how by means of continuous innovations."

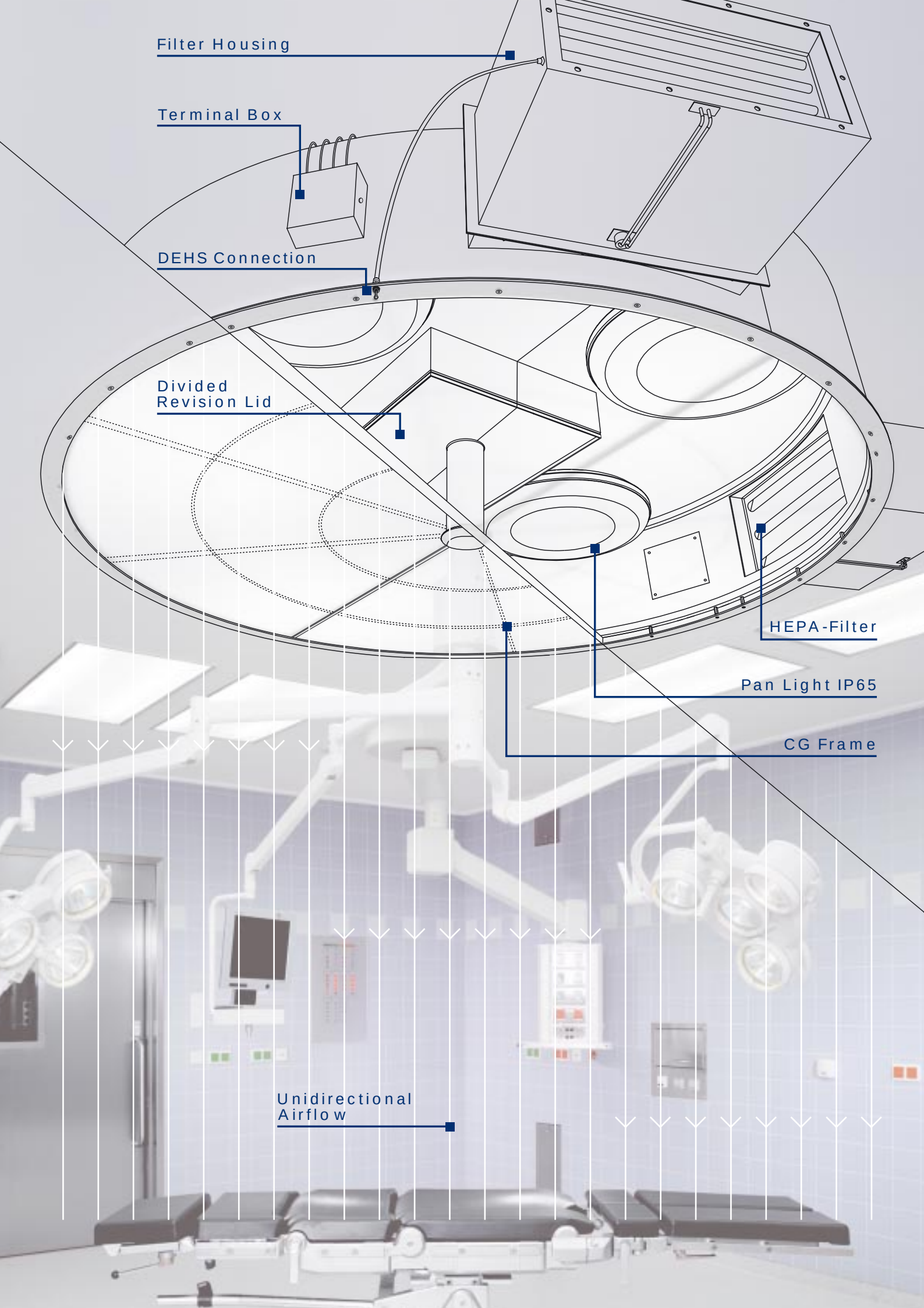
Dipl.-Ing. (FH) Michael Mayr, Ing. Michael Pall

Management McLeod Russel Filter GmbH

Innovative

Efficient

Competent


Filter Housing
Terminal Box
DEHS Connection
Divided
Revision Lid
HEPA-Filter
Pan Light IP65
CG Frame
Unidirectional
Airflow

Advantages Optima CG

Highest Air Cleanliness

3520 particles/m³ ≥ 0,5 µm = ISO class 5 acc. to EN ISO 14644-1
(100 particles/cft ≥ 0,5 µm = class 100 acc. to Fed. Std. 209e)

Lowest Germ Count

10 CFU/m³ acc. to A-NORM H 6020 T1/ room class I (RK I)

Ideal Airflow (TAV) through round Construction

Unidirectional Airflow (TAV)
acc. to A-NORM H 6020 T1/RK I and II

Reduction of Air Volume of up to 30%

compared to common ground forms

Leak Test (DEHS-Test) checked

very well suited for test with DEHS aerosol (A-NORM H6020 T1)

Sterile Air Distributor Type CG

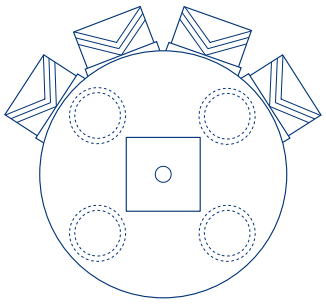
The air supply preconditioned in the air conditioning system is introduced to the pressure chamber through the air ducts and through the HEPA-filter (H13), which is applied to the side of the sterile air distributor in special filter housings. In the following, the air – filtered from suspended particles – is blown to the bottom through a stream-optimising trapeze profile (= CG distributor), covered twice with special fabric.
The dual-layer covering helps create a direction-oriented, homogenous, unidirectional airflow (TAV), which is absolutely necessary for obtaining room class I (RK I) and RK II by A-NORM H 6020. The TAV, also termed protective stream, ensures the immediate removal of any impurity, particles, and germs from the surgical area.

Clean-Room Warranty

Corresponding to EN ISO 14644-1: ISO class 5: max. 3520 particles/m³ (for particles ≥ 0,5 µm). Detection slightly below the CG distributor as well as in the OP-table axis 120 cm up from the ground.
According to A-NORM H 6020, Part 1, RK I (max. 10 CFU/m³) in the surgical vicinity above the table.
Proof of Function: proof of clean-room class and non-leakage with test-aerosol (DEHS-Test), by presenting measurement protocols of a reference facility at an Austrian hospital.
Proof of Stream: proof according to A-NORM H6020 Part 1 for required TAV, through presentation of a visualised stream (video) created by an independent professional agency.

Optima CG

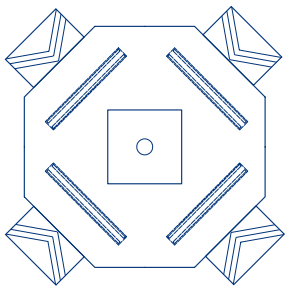
For the formation of a germ and particle-free zone in the direct vicinity of the surgucal area through a unidirectional airflow (TAV). The requirements for room class I and II according to A-NORM H6020, Part 1, as well as room class I corresponding to DIN 1946, Sheet 4, have been met.
Inspection of construction sample via the hygiene designation (e.g. from the office of the state government of Lower Austria). Hygiene evaluation conducted by acclaimed experts for hygiene (e.g. Department of Hygiene at the University of Vienna). The sterile air distributor for operating theatres features a round construction, thereby facilitating the ideal correlation between the outlet surface and the air volume. There are ideal conditions for unidirectional airflow (Key phrase: "disruptions through dead spaces") due to the round geometry (no actual corners) – disturbance of induction and various conditions for streaming out through the surrounding air space can be prevented on a broad range. Nearly all of the points of the sterile air distrubutor show the same consistent airflow due to the special, round ventilation area. The air volume is reduced through the round basic structure, thereby facilitating a conservation of energy in comparison to conventional operating areas, which are equipped with rectangular or octagonal designs.



Optima CG

Standard Size:
Diameter 2400 mm
Height 450 mm
Air Volume 4000 m^3/h
Air Velocity 0,25 m/s

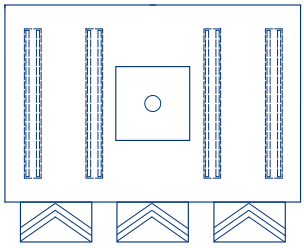
Manufactured in all demanded sizes



Oktaeder CG

Standard Size:
Key Width 2400 mm
Height 450 mm
Air Volume 4600 m^3/h
Air Velocity 0,27 m/s

Manufactured in all demanded sizes



Rectangular CG

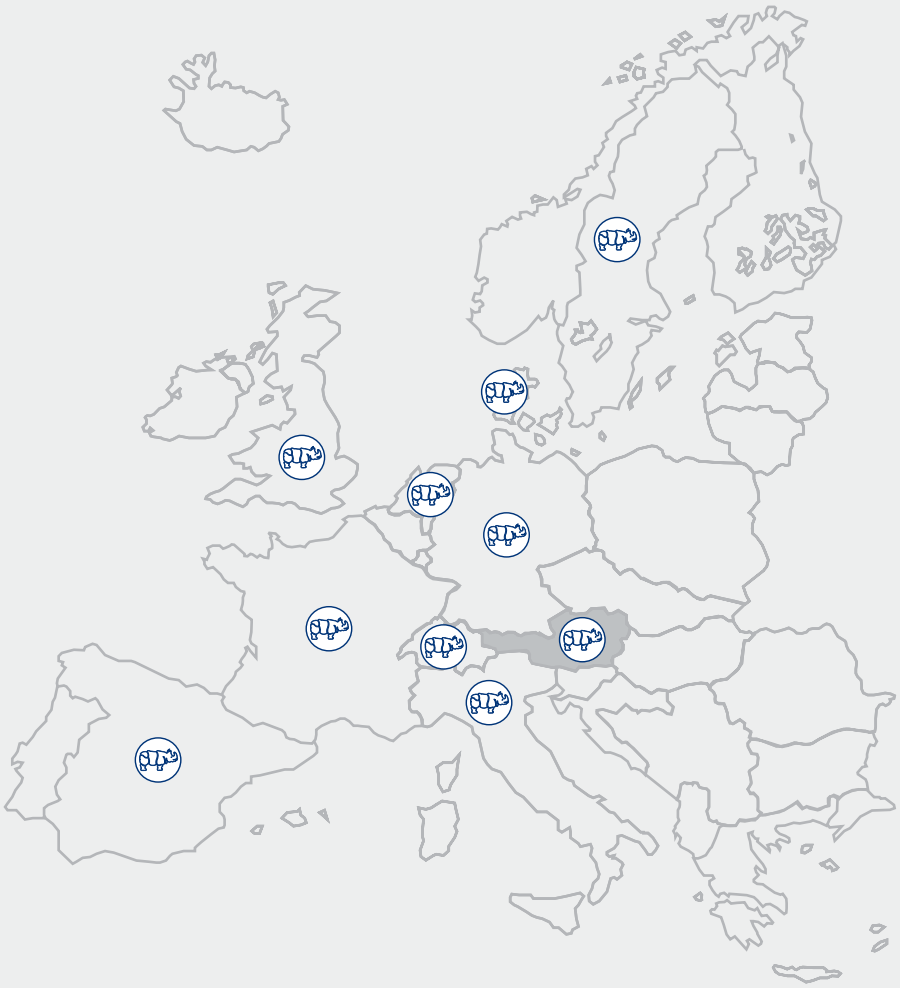
Standard Size:
Length 2400 mm x Width 1600 mm
Height 450 mm
Air Volume 3700 m^3/h
Air Velocity 0,27 m/s

Manufactured in all demanded sizes

Performance Features of Optima CG

Air Distributor Box	Round construction made from aluminum sheet, welded air-tight, and laquered completely resistant to disinfecting agents (RAL-colour type 9010) on the inside.
Special Filter Housing	Filter Housing is welded gas-tight, resistant to disinfecting agents, featuring a connection for an air duct. Positioning of the filter housing may be selected individually.
Filter Frame	Sealing frame featuring integrated testing groove, which is fastened to the inside of the housing gas-tight, through a polyurethane sealant, as well as a testing groove connection (according to DIN 1946, Part 4) for the examination of the filter-tightness.
Luwa-HEPA-Filter	The filter medium consists of folded fibreglass paper with thread range spacers. The robust filter frame is made from galvanized sheet-steel and is equipped with a EPDM profile-gasket.
Air Distributor/ CG Distributor	CG distributor frame made from stream-optimised aluminum profiles, covered with special fabric on both sides; subdivided into single large-sized elements; can be removed to the bottom. The sealing face is defined by the equally divided fixtures. No inserted CG frame.
Basic Lighting	Round, closed pan light with perforated plate reflectors, protection type IP 65 featuring built-in electronical devices.
Passing Ducts for Surgical Lights	Passing ducts for surgical lights tripod located at air distributor box and at CG distributor adapted to the tripod diameter. No complete passing boxes inside the housings.
Potential Balance	The connection for the potential balance is located on the outside of the air distributor box.
Peripheral Angle	A surrounding attachable angle is integrated in the air distributor box for the link to the suspended ceiling.
Testing Connection for the aerosol concentration upstream the filter	Testing connection to measure the aerosol (DEHS aerosol) concentration upstream of the HEPA-filter. Measurement may be conducted at any time without removing the CG distributor frame.

The HEPA-filter and the CG distributor frame may only be mounted shortly before operating begins and after the final cleaning of the room has been completed.



McLeod Russel Filter GmbH
Ortsstraße 18, A 2331 Vösendorf
Tel.: +43 (0)1 698 66 77-0
Fax: +43 (0)1 698 66 77-34
www.mcleodrussel.at
office@mcleodrussel.at

Head Office

McLeod Russel Holdings PLC
2 Hitching Court, Blacklands Way,
Abingdon Business Park,
Abingdon, Oxon, OX14 1RG, United Kingdom
Tel.: +44(0)1235 536677 • Fax: +44(0)1235 536670
www.mcleodrussel.com

Clean Air and Liquid Filtration Operations

Denmark

Industri-Filter A/S
Avedoreholmen 88, DK 2650 Hvidovre,
Tel.: +45(0)36 49 66 00 • Fax: +45(0)36 77 10 07
www.mcleodrussel.dk

France

McLeod Russel SA
Z.I.de la Chalotterie, B.P. No 2,
77390 Ozouer-Le-Voulgis
Tel.: +33(0)1 64 07 6125 • Fax: +33(0)1 64 07 6743
www.climavent.fr

Germany

McLeod Russel GmbH & Co OHG
Am Technologiepark 1-5, D 63477 Maintal
Tel.: +49(0)6181 9082 01 • Fax: +49(0)6181 9082 110
www.mcleodrussel.de

Italy

McLeod Russel Filtri Srl
Via G Galilei No 29, 1-20090 Segrate (MI)
Tel.: +39(0)2 269 263 21 • Fax:+ 39(0)2 269 264 59
www.mcleodrussel.it

Netherlands

McLeod Russel Filter BV
Postbus 41, 1560 AA Krommenie
Tel.: +31(0)75 657 2240 • Fax: +31(0)75 657 2239
www.mcleodrusselfilter.nl

South Africa

Vokes Filtration(Pty)Ltd
PO Box 2734, Benoni 1500
Tel.: +27(0)11 425 0470/1/2 • Fax: +27(0)11 425 0473

Spain

McLeod Russel SL
C/Marina 7 Pol Ind Feliu Vila, E08338 Premia de Dalt, Barcelona
Tel.: +34(0)93 752 2718 • Fax: +34(0)93 752 2994
www.infiltro.com

Sweden

McLeod Russel Scandinavia (AB)
Scandfilter AB
SE 512 85 Svenljunga
Tel.: +46(0)325 661600 • Fax: +46(0)325 611490
www.scandfilter.com

Switzerland

McLeod Russel Filter AG
Wilstrasse 11, CH 8610 Uster
Tel.: +41(0)43 399 2700 • Fax: +41(0)43 399 2701
www.mcleodrussel.ch

United Kingdom

McLeod Russel (UK) Ltd
Farrington Road, Burnley, Lancashire, BB11 5SY
Tel.: +44(0)1282 413131 • Fax: +44(0)1282 686200
www.mcleodrusseluk.com

Vokes LTD
Henley Park, Guildford, Surrey, GU3 2AF
Tel.: +44(0)1483 569971 • Fax: +44(0)1483 235384
www.vokes.com

Cudd Bentley Partnership Limited
Wingate House, High Street, Ascot, Berkshire, SL5 7HT
Tel.: +44(0)1344 628821 • Fax: +44(0)1344 623448
www.cuddbentley.co.uk

Other Operations

Eurogard BV
Spaarpot 102A, PO Box 109, 5660AC Geldrop
Tel.: +31(0)40 289 4894 • Fax: +31(0) 40 286 0692
www.eurogard.com

Javeline Water Engineering Limited
The Pump House, Belvoir Way, Fairfield Industrial Estate, Louth, Lincolnshire, LN11 0YA
Tel.: +44(0)1507 607175 • Fax: +44(0)1507 607521
www.javelinewater.co.uk and www.jwepumps.co.uk

Kennedy Wagstaff Limited
151 Parker Drive, Leicester, LE4 0JP
Tel.: +44(0)1162 354321 • Fax: +44(0)1162 366447
www.kennedywagstaff.co.uk