

Clean Room Engineering

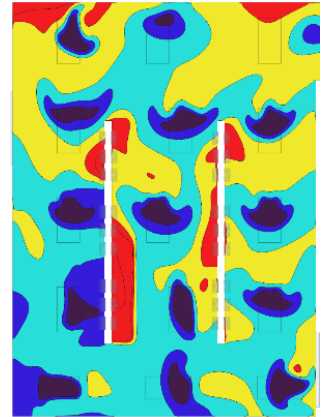
OUR SERVICE FOCUS

If you're a clean room engineer, air quality certifier or engineering consultant needing to ensure the performance of your cleanroom and avoid air quality events, Matrix is an established and internationally recognised CAE firm providing world-class Computational Fluid Dynamics (CFD) engineering simulation and assessments.

SERVICE / SUMMARY

Advanced CFD capability with proven experience in clean room, HVAC and carpark simulation. Specific capabilities include general flow simulation, thermal comfort, multi-species diffusion and particle tracking.

- Specialists in Computational Fluid Dynamics (CFD)
- Experience in medical clean room simulation
- Optimisation studies for clean room air balancing
- Analysis and optimisation of HVAC systems
- Thermal comfort analysis and design
- Advanced analysis problems, e.g. solar loads, radiation, multiphase flows...etc.
- Proven seamless collaboration with many clean room engineers and consultancies over the years



PROBLEMS / SOLUTIONS

Matrix provides solutions for clean room engineers and consultants needing detailed engineering analysis.

Problem	Solution
How do I demonstrate that my design is code compliant and that my customer is confident it will perform well in service?	Simulate your clean room design before commissioning to ensure it is fit for purpose.
How do I avoid paying for costly analysis software, staff training and retainment?	Matrix prides itself on offering value for money and its ability to partner with our customers to achieve results.
How to optimise air supply and return placement to maximise air quality?	Optimisation studies can be powerful tools in determining the optimal air flow distribution in your clean room.
If an air quality event occurs in service, how do I identify the root cause and avoid further problems?	Significant expertise in clean room simulation and troubleshooting.

CUSTOMERS / EXPERIENCE

- Air quality consultants Opia (Costa Rica), large medical and electronic device companies worldwide
- Medical clean room simulations
- Air quality event troubleshooting
- Data centre and thermal comfort HVAC analyses
- Carpark simulations to AS1668.2 (Prediction of CO concentrations and mechanical ventilation assessment)

OUR TEAM

Meet our highly qualified and experienced engineering analysts:

Don Campbell, BSc, BE(Hons), PhD, CMEngNZ, CPEng (Mech), IntPE, NAFEMS Adv Reg Analyst, 45 yrs exp

James Hamilton, BE(Hons), PhD, CMEngNZ, CPEng (Mech), IntPE, composites & non-linear FEA, 20 yrs exp

Kava Crosson-Elturan, BE(Hons), (Mech, Purdue), numerical simulation FEA/CFD, physics-driven design, 18 yrs exp

Guido Quesada, MSME, ASME, FEA, advanced Abaqus instructor, pipe joints, product development, 23 yrs exp

James Cheng, BE(Mech), ME(Mech), fracture mech, press vessel design, plastic injection moulding, 18 yrs exp

ABOUT MATRIX

Matrix provides solutions for engineering design and information management. New Zealand's first and largest team dedicated to engineering computing, supporting the process of innovation for over 35 years. Visit www.matrix.co.nz.