

Role Description

Mechanical Design Engineer

Team:	AspiraDAC
Reports to:	CEO, AspiraDAC
No. direct reports:	Nil
Location:	Revesby, with flexible working arrangements available.
Employment type:	Full-time
Requirement:	Australian Citizenship or the right to work within Australia

1. Purpose of the role

Demonstrating an innovative and creative mindset that aligns with AspiraDAC's mission to bring new technology to market, play a leading technical role in the development and deployment of an innovative new technology to extract CO₂ from the atmosphere for permanent geological sequestration. The key task is the detailed design, development and build of a working prototype DAC system. Following successful testing, manufacture of approximately 170 modules will commence and the Mechanical Design Engineer will be a key driver in this effort.

2. Key accountabilities

- **Design** - Design, develop and build the first working DAC module at 2tpa capacity. Design and develop mechanical design concepts. Produce standard designs using CAD software and create assembly prints, mechanical drawings and fabrication specifications. Calculate cost estimates for product designs, incorporating costs of labour, material, delivery and overhead. Meet with suppliers and project stakeholders to review designs and alter as needed.
- **Testing** - Develop and build prototypes and lead functional testing. Consult during product manufacturing, advising on design. Record and evaluate testing data, altering designs as necessary to bring them to safety, performance and efficiency standards.
- **Manufacturing** - Provide technical support and drive the manufacture, assembly and installation of the 170 modules. Devise solutions to solve mechanical design issues, modifying designs to correct operating and production issues. Assist in developing plans for large scale manufacture of the modules.
- **Project specifications and reporting** – Prepare and submit project reports within compliant timelines. Coordinate and review engineering schedules with project team members. Review and approve documentation for quality and safety. Attend weekly team meetings to provide progress reports, updates on progress, strategise on next steps and acquire information, collaborating to determine project requirements.



- **Relationships** – Develop close working relationships with AspiraDAC’s CEO and Senior Project Engineer. Build relationships with key suppliers, contractors and stakeholders to support the complete project lifecycle.
- **Processes** – Support and develop processes and systems including procedures and tools for operations and compliance.
- **Other ad hoc support** – As required.

3. Key challenges

- **Delivery** - A broad and continually evolving range of business support services to be delivered to an excellent standard of work, often with unavoidable constraints.
- **Responsiveness** – Maintaining accuracy and attention to detail, often while under pressure and working to tight deadlines, will be vital to success.
- **Prioritisation** - In a rapidly growing company and sector, negotiating and juggling priorities on what is important to deliver will be necessary.
- **Collaboration** - With a geographically dispersed workforce and stakeholders, connections and relationship building will often happen remotely.
- **Complexity** - Navigating complex regulatory and compliance requirements, building knowledge in these areas will be important.

4. Key relationships and stakeholders

Stakeholder	Internal or external
AspiraDAC directors, staff and contractors	Internal
Suppliers (local and offshore)	External
Project partners and other collaborators	External

5. Knowledge and experience

- Tertiary qualification in mechanical engineering and at least five years related work experience in an engineering role.
- Experience in detailed mechanical design with packages such as AutoCAD or Solidworks.
- Experience in a design office and/or manufacturing, including with automotive, refrigeration/HVAC, hydraulics and FEA would be an advantage.
- Previous experience in R&D, innovation and Design for Manufacture would be viewed highly.
- Ability to procure designed parts from suppliers either locally or offshore.
- Self-starter and ability to work autonomously.



6. Key capabilities

- **Communication** - Able to communicate complex or sensitive information, adapt communication styles for different people.
- **Plan, prioritise & manage work** – Ensures team work plans are consistent with business strategy and goals, understands how work fits into the bigger picture, anticipates disruption and change external to the business.
- **Deliver results** - Creates a culture of delivery, connect individual results to business, client and community outcomes, recognise and celebrate delivery, identify and remove barriers to delivery.
- **Solve problems & make decisions** - Uses research and analysis to identify problems, work through issues, consider alternatives and take appropriate action. Recognises and celebrates initiative to solve problems.
- **Technology, systems & processes** – Maintains a view of the “complete system” – the complete environment and ways to improve and connect the system.
- **Regulation, compliance & risk** - Monitors the regulatory environment, anticipates change and ensures compliance.
- **Personal impact** – Demonstrates self-awareness of personal impact on others and workplace culture.
- **Strategic Partnerships** – Engages strategic partners in projects and work.

7. Key attributes

- **Imaginative** - Look for possibilities and opportunities for creative solutions, show curiosity and openness to new ideas, and think outside the box.
- **Adaptable**– Embrace change and flexibility, demonstrate comfort with ambiguity and complexity, and support others through transition. Maintain calmness and persistence in the face of challenge or adversity, adjust and bounce back from challenging experiences.
- **Accountable** – Takes responsibility for own performance, initiative, actions, impact on others and team performance - and encourage this in others.
- **Striving** – Shows drive and motivation in the interests of the business and clients, identify opportunities, are proactive around improvements, focus on goals and prioritise work for the greatest impact. Takes reasonable and well calculated risks in the interest of the business and within parameters and seek out boundaries when unsure.
- **Growth mindset** – Invite challenge, encourage genuine debate, be able to make difficult decisions and take bold actions. Commit to life-long learning and personal growth, develop self-awareness, and be proactive in seeking improvement and feedback.

8. Decision making

- Plan, lead and organise work to achieve agreed business objectives and performance criteria, within approved work plans.
- Acting autonomously and being proactive to deliver on priorities, referring matters requiring a higher level of approval to the CEO, AspiraDAC.