MEP ENGINEERING CO

HVAC Engineering Support & Shop Drawings for Mechanical Contractors

Services Offered

www.mepec.com.au



Our Team

01

We provide Engineering Support & Shop Drawings for Mechanical Contractors across Australia & NZ, delivering projects with mech contract value ranging from $250k to $50M+.

All the major Tier 1 companies have large in-house engineering & drafting teams.

You can think of MEPEC as a plug & play Tier 1 Engineering + Drafting Team, giving you instant access to the same resources the big players have, available to support you on a project-by-project basis, without having to spend years building an in-house team you'll need to keep fed with a consistent project pipeline!



Engineering

02

CONSTRUCT-ONLY PROJECTS

Design Checks

We've got your back by carrying out design checks on the tender drawings, to make sure the installation works the first time around.

When we find errors or inconsistencies, we'll raise RFIs so that the design consultants can rectify the issues, and hopefully you can get paid a variation in the process to implement the fixes.

We want to avoid a situation where you are left to defend the quality of your install at the end of the job, when the design was flawed to begin with.

Equipment Selection & Technical Submittals

Your project managers are likely stretched thin.

Our engineers are adept at reviewing supplier proposals and we can assist in the selection of equipment and putting forward technical submittals in a format that makes the consultant approval process smoother.

Value Engineering

Our team loves to review mechanical services with the aim to optimise buildability and find more efficient ways to deliver the same or better outcome for the developer/builder, while reducing the material and labour cost to you.

We are proficient in the art of value engineering and although there may be limited scope of what we can change in a construct only contract, we will try to incorporate as much as we can within the confines of the contract.

Calculations

We carry out all manner of calculations as may be required for final equipment selection & design detailing - fan statics, pump statics, duct sizing, pipe sizing, pipe riser anchor & expansion calcs, etc

Tender Support

Aside from the main items above, the team at MEP Engineering is always keen to provide support during tender.

We'll often come along with you to your final tender interview with the builder, particularly if you want to build their confidence in your ability to deliver on technically complex projects.

Engineering

03

DESIGN & CONSTRUCT PROJECTS

When a project is awarded as a D&C, the MEP Engineering team provides everything we do under the construct-only contract, but with a lot more scope to modify the design.

The aim is to make the design as simple and cost effective as possible, while still satisfying the principal project requirements (PPR / client brief).

We regularly achieve savings of 5 - 15% when the right opportunities present themselves.
We find the following key principles lead to a fruitful value engineering process:

- Heatload Calcs
- Type of System
- Reduce / Consolidate quantities
- Carpark CFD modelling
- Ductwork & Pipework Optimisation

We recently recorded a webinar where we explain the items above in detail with a few examples from past projects. For more information, use the QR code to access the recording.



Drafting

04

We pride ourselves on our strong local drafting team.

Our Senior drafters are top operators in the industry and have extensive backgrounds working with mechanical contractors on Tier 1 projects.

Intermediate and junior drafters are qualified professional engineers, who we have trained in-house and often operate in a hybrid capacity (engineering and/or drafting) depending on the requirements of the specific project.

We find that we provide the best value on complex projects with mechanical works contract value in the range of $250k to $50M+.

Buildability & Attention-to-Detail

The MEPEC team appreciate that minor details on a drawing can have massive time and cost implications on site.

As such, we are focused on continuously refining our systems & processes, aiming to consistently produce high quality shop drawings.

Buildability is always front of mind when preparing shop drawings.

Innovation - Site Hanger Set-out

Time is money in construction.

As part of our drafting service, we have the option of assisting you with efficiently setting out hangers on site.
In the right conditions, we can accurately set-out up to 400 hanger points in a day.
(1 x MEPEC technician + 1 x Contractor's installer)

Tier 1 contractors do this as standard on all greenfield projects ("Trimble").

The MEP Engineering team gives you access to the same capability to execute on your next project!

Drafting

05

Lead BIM Coordinator

One of our objectives is to help ambitious contractors take on larger and more complex mechanical services projects.

On this journey you will inevitably win some work which will require BIM and often as a mech contractor your contract will see you take on the responsibility as lead BIM coordinator.

BIM = Building Information Modelling

In simple terms, all services will need to be modelled in 3D - usually using REVIT software.

Each trade is responsible for modelling their own services but is also linked into a central model where they can see (but not edit) all other trades.

The lead BIM coordinator is then responsible for creating regular clash detection reports, and chairing workshops to work through any problem coordination areas.

The MEPEC team can provide this service on your behalf if the need arises.

Innovation - 3D point cloud scan

Retrofit projects are often challenging because we need to work in limited ceiling space, while avoiding existing services and structure.

We always start such projects by taking a 3D point cloud scan of the site to capture the extent of existing services.

Next, we rough in the AC units as currently shown on the consultant design drawings.

95% of the time, the layout doesn't work as tendered and we are required to put on our problem-solving hat to come up with a reasonable solution which satisfies the design intent, while working within the limitations of available space.

When done correctly, the resulting shop drawings are properly coordinated and make the installation phase much more efficient than trying to figure out site measures on site.

CFD Modelling

06

Value Engineering Tip:

Where a carpark needs to be mechanically ventilated, we can apply a performance solution via CFD modelling, rather than the overly conservative deemed-to-satisfy approach defined in AS1668.2-2012.

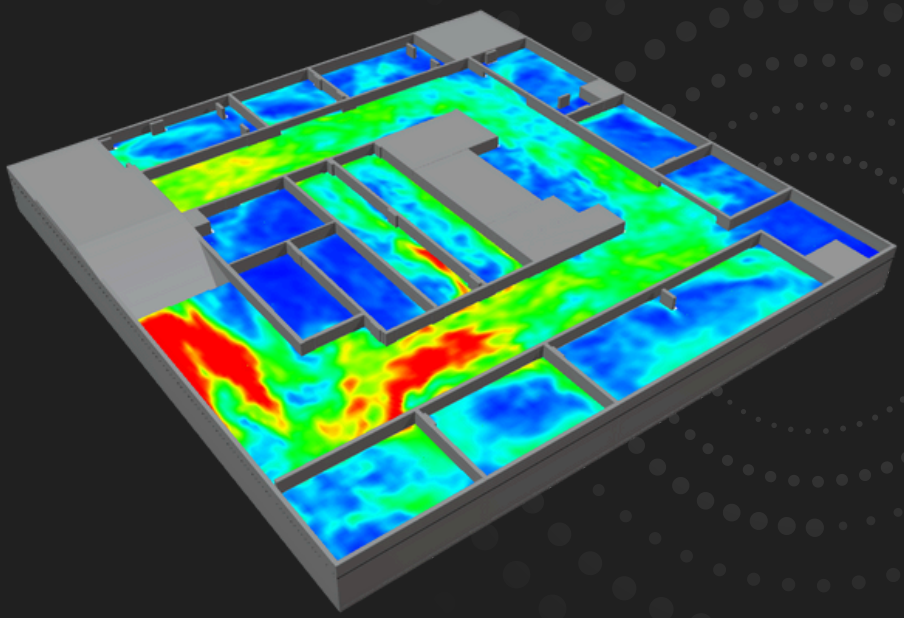
Benefits include:

- Eliminate / reduce extensive ductwork reticulation
- Easier coordination in limited services space in basements
- Reduction in cost of supply & installation works.
- Opportunity to reduce air flow rates = reduction in ongoing operational energy costs
- Confidence in adequate ventilation design (some DTS solutions don't perform well in some carpark configurations, as it's a one-size-fits-all formula)

Bonus tip - Carpark ventilation rates required in the latest version of AS1668.2 (2024) appear to be lower than previous versions of the standard. See Clause 4.4.4.2.

These reduced airflows are similar to the results we have been able to achieve in the past via CFD.

Though the 2024 version of the standard is yet to be adopted in the NCC, you may be able to discuss with your building surveyor / certifier to apply the latest standard on your project.



MEPEC

ENGINEERING

CO

MEP ENGINEERING CO

+61 0497 837 286

sales@mepec.com.au

www.mepec.com.au

www.linkedin.com/in/philiporebiyi/

www.youtube.com/@mepengineeringco.9062