Modular Pods White Paper

BATESSMART™

With RLB and Renzo Tonin & Associates

Modular Pods
A Smart Workplace Fit

Modular Pods have garnered a great deal of recent interest in the commercial fitout market.

As a prefabricated room system, they are widely touted as suitable for the hybrid workplace, easily adaptable in their design and less carbon intensive than traditional construction solutions.

But finding exact information on their performance—acoustic, buildability, environmental and cost—isn't a straightforward endeavour.

The Bates Smart workplace team has analysed how modular pods stack up as a design solution when compared to traditionally built rooms. Our research draws from the expertise of acousticians and cost consultants to ensure thorough analysis.

This white paper summarises our findings and provides a quick guide on the components and benefits of modular pods.

1

Pictured

1. Silen - Silen Space Hybrid Range

Summary Findings

Our review of a range of modular pods on the market has found that they outperform traditional construction for small meeting rooms (4 people or less) across the following four criteria:

1. Hybrid Workplace Suitable

The rise in hybrid working requires a greater allocation for small acoustically separated rooms for online meetings. Demountable pods offer a spatially efficient footprint that can be inserted easily into an active workplace.

2. Better Sustainability

Pods can help businesses reduce their Embodied Carbon Count. This is due to the ability to construct, demount and reconstruct over and over again with minimal material wastage.

The prefabricated design promotes material efficiency, as pod wall and ceiling panel sizes are aligned with material sheet sizes to minimise waste. Finishes can also be updated over time, allowing the design to be refreshed with minimal material.

3. Value for Money

As part of this paper, RLB have compared the cost of traditional construction against mid-range pod systems. The pods were cheaper across the board with smaller rooms being 44% cheaper than the traditional counterpart.

4. Acoustic Separation

Acoustically, pods and traditional construction have equivalent performance. Their advantage comes in standardisation - as stand alone pods they avoid the acoustic challenges of in ceiling services clashes.

Key Criteria for Review

This paper found 3 key criteria needed to be understood when specifying modular pods:

1. Cost vs Traditional Rooms

Are modular pods more expensive than traditional rooms, and at what point is this cost efficiency lost?

2. Acoustic Performance

How do the pods perform acoustically when compared to traditional rooms?

3. Inclusions + Custom Elements

What is included and excluded from the pod, and what can be changed to align with the fitout design?

Pictured

Schiavello - Focus Quiet Room Brochure

Pictured

Schiavello - Focus Quiet Room Brochure

Minimum Requirements

The modular pods reviewed comply with the following:

Local Manufacture	**No Floor Threshold (for Accessibility compliance)**
Modular Construction	**Standardised Sizes + Finishes**
Ready for Furniture, Joinery + AV	**Standard Lighting + Ceiling Services**
Acoustic - Standard DW Ratings (28-36)	**Credible Sustainability Certifications**

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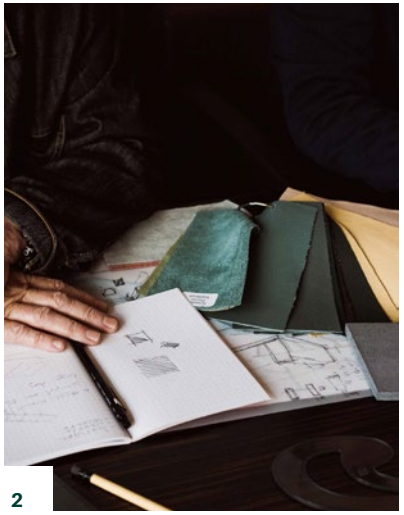

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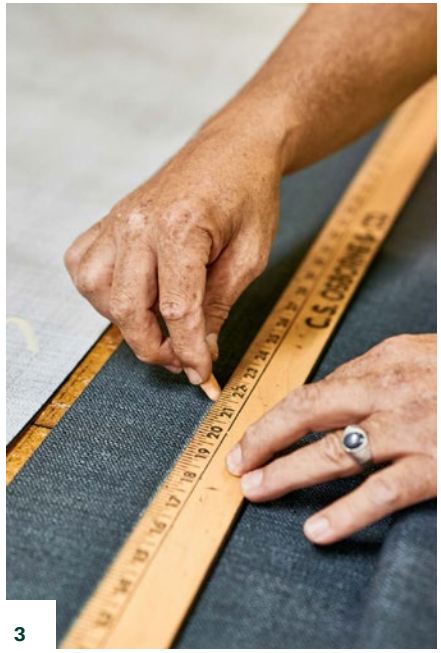

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Pictured

1. Zenith - Verse Brochure, Floorsense Rooms
2. + 3. Courtesy of Schiavello and Zenith

Scope of Review

This review included a comparative analysis of five sizes of pods.

Phone Booth

1 Person Meet / Focus

2 Person Meeting

4 - 5 Person Meeting

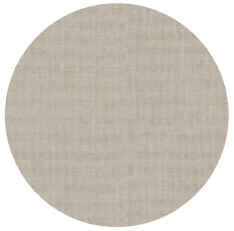
6 - 8 Person Meeting

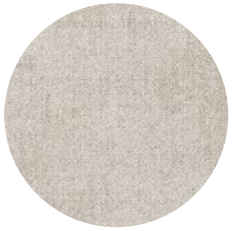
Pictured

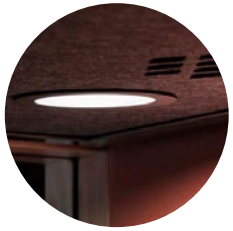
Pod room images courtesy Schiavello

Parts of a Pod - Inclusions + Customisable Elements

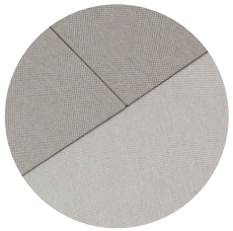
The prefabricated design promotes material efficiency and standardisation, however, certain elements can be customised to align with the desired design outcome.







	1. Wall Lining	2. Floor	3. Light + Services	4. Furniture + Joinery
Inclusions	Supplier standard house fabric/ecopanel wall lining	N/A	Supplier standard LED lighting and AC vent	Supplier standard laminate high bench joinery included in 1P phone booth
Custom	Specifier can customise if required	Carpet tile is part of fitout specification	No customisation required	All other furniture to be loose and supplied separately to the modular pod systems



	5. Framing Construction	6. Glazing	7. Ceiling	8. Power + Data
Inclusions	Timber or powder-coated aluminium frame with hinged self closing door (latch handle)	Choice of 6.76, 10.38, 12.5 Clear laminated glass	Supplier standard ceiling panel system	Typical room includes: 1 x DGPO 1 x dual USB 60W A/C
Custom	Locking mechanism additional	Higher acoustic performance can be achieved with thicker glass	Do not recommend customisation to ceiling which may break the acoustic seal	Additional GPOs and USB/data provisions can be added

Pictured

Schiavello - Focus Quiet Room Brochure

Acoustics

For smaller sized rooms the modular pod system offers acoustic performance that is equivalent to a traditionally built meeting room. For larger sizes (4-5P and larger) similar levels of performance can be achieved through upgrades of the base pod system.

Our acoustic consultant has determined that modular pods are generally fit for purpose in an office environment, meeting industry average acoustic requirements. For 4 -5P rooms or larger, it is recommended to have a Category 2 upgrade at minimum, so the acoustics of the rooms align with traditional large meeting rooms.

Modular pods are generally subject to the same set of acoustic considerations, site/base building related risks and design conditions as the construction of traditional rooms. These include the impact of additional mechanical or AV solutions, which break the acoustic seal of the pod.

Testing of the pods face the same set of challenges around accurate acoustic testing, given that acoustic results will vary based on individual scenarios and designs. It is highly recommended that a prototype is mocked up on site and inspected prior to procurement at scale.

Independent acoustic assessments should be carried out on individual scenarios as acoustic results will vary based on the modular pod system, base building environment and finishes specific to that project.

1

2

Pictured

1. Zenith Verse 3 - Meeting Room
2. Zenith Verse - Floorsense Rooms

Acoustics

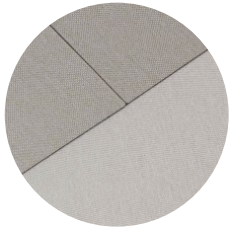
Points of acoustic weakness and potential mitigation strategies are as follows:

1. Wall Lining

Wall lining, thickness and insulation can be upgraded to achieve higher acoustic ratings

2. Glazing

Glass thickness can be upgraded to 12mm Vlam Hush glass or as recommended by Acoustician/Supplier

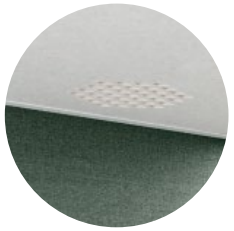


3. Ceiling Services Penetration

Acoustic sealant to all penetrations (i.e. sealed airtight)

4. Fan

Packing fan intakes with high density acoustic insulation or acoustically treated intake system (lined with acoustic insulation)



5. HVAC Systems

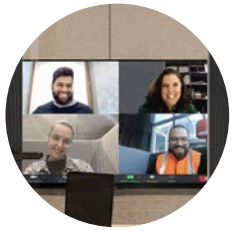
If supplementary HVAC design is implemented for the pods, acoustic review of the connection to the lid (including transfer ducts) will be required

6. Door

Full perimeter rubber acoustic seals could be added

7. Speakers

Not recommended in the ceiling or behind perforated surface wall panel cavity. Surface mounted (same wall as TV/screen, with no penetrations permitted in MDF backing) or placed on the desk, with maximum SPL limited to 65 dB(A).



8. TV Screens

TV/screens only permitted to be surface mounted, with penetrations/fixings limited to perforated surface panel. No penetrations permitted in MDF backing.

Pictured

Schiavello - Focus Quiet Room Brochure

Cost Calculations
Modular Pods vs Traditional Construction

Modular Pods offer substantial cost savings over traditional construction.[1] The percentage savings decline as the pods grow in size.

Pod Type	Pod Cost [2]	Traditional Construction Cost [3]	$ Difference	% Difference
Phone Booth	$ 9,660.00	$ 17,040.00	- $7,380.00	44%
1P Focus	$ 21,010.00	$ 27,970.00	- $6,960.00	25%
2P Focus / Meeting	$ 22,670.00	$ 29,490.00	- $6,820.00	23%
4-5P Meeting	$ 38,550.00	$ 44,040.00	- $5,490.00	12.5%
6-8P Meeting	$ 51,080.00	$ 55,040.00	- $3,960.00	7%

Notes

1. Refer to Appendix 2 for Parameters of Cost Comparison, outlined by RLB
2. Pod Costs provided by Supplier 2. Please see appendices.
3. Traditional Construction Costs provided by RLB
4. This table does not represent a direct like for like comparison. The materials and finishes vary across each brand and each range. Its purpose is to show the range of prices in the market that underpin the comparative pricing to traditional construction. These prices are subject to market variation and product specification.

Pictured

Schiavello - Focus Quiet Room Brochure

Conclusion

As businesses grapple with how to align their workplaces to be more sustainable and adaptable to meet the demands of hybrid working, modular pods offer a great alternative to traditional rooms. This is particularly so for rooms for 1-4 people, which offer sound acoustics and significant cost savings.

Contributors to this report were Bates Smart, Renzo Tonin & Associates and Rider Levett Bucknall (RLB) who have provided valuable expertise, cost analysis and acoustic insights.

Pictured

Zenith - Verse 2 Meeting Room

Pictured

Schiavello - Focus Quiet Room Brochure

Appendix 1.0

Acoustics
Summary by Renzo Tonin & Associates

Overview

- The standard product offering of the analysed modular pod system (Supplier 2 Focus Rooms – Phone Booth, 1P Meet/Focus + 2P Meeting) is generally fit for purpose for the nominated use of these rooms in an office environment, with industry average acoustic requirements.
- Category 2 upgrade is recommended at a minimum for 4-5P Meeting Focus Pods.
- Additional acoustic treatments likely (exceeding category 2 upgrades) and will need to be reviewed on a case-by-case basis for 6-8P Meeting Focus Pod, to meet client/project expectations.

Comparative Analysis to Traditional Construction

- Other scenarios with similar levels of performance can be achieved through upgrades of the base pod system.

Pod separation to open plan areas:

- Acoustic separation between a pod and an open plan area in front of the pod door is similar to what it would be for a traditional build. The acoustic separation is limited by the door in both instances.
- Like any traditional private office, the pod door can incorporate acoustic seals to get a similar level of performance achieved by a traditional build office space. This is likely to be the most common scenario for pod use – where the pod is used as a breakout space from an open plan area to enable a private phone conversation or similar. In this configuration, the pod provides close to an equivalent acoustic separation to a traditional build.
- Acoustic separation between a pod and an open plan area next to or behind the pod – This is important in the event there are open plan areas behind the pod, not just in front.

Back to back pods:

- For pods installed in a back-to-back scenario, the acoustic separation between adjacent pods will be similar to that created by traditional stud wall constructions (single layer plasterboard to each side of studs).
- If additional MDF lining or similar is applied to outside of the pod shell, performance similar to multi-layer plasterboard wall systems in traditional stud wall constructions can be expected.

Category 2 upgrade is recommended at a minimum for 4-5P Meeting Focus Pods. Additional acoustic treatments likely (exceeding category 2 upgrades) and will need to be reviewed on a case-by-case basis for 6-8P Meeting Room Pod, to meet client/project expectations.

Points of acoustic weakness in the assessed Modular Pod System and potential mitigation strategies are as follows in the adjacent table:

Door	Full perimeter rubber acoustic seals could be added
Ceiling Services Penetration	Acoustic sealant to all penetrations (i.e. sealed airtight)
Fan Noise (proprietary system)	Packing fan intakes with high density acoustic insulation or acoustically treated intake system (lined with acoustic insulation)
TV / Screens	TV/screens only permitted to be surface mounted, with penetrations/fixings limited to perforated surface panel. No penetrations permitted in MDF backing.
Speakers	Not recommended in the ceiling or behind perforated surface wall panel cavity. Surface mounted (same wall as TV/screen, with no penetrations permitted in MDF backing) or placed on the desk, with maximum SPL limited to 65 dB(A).
HVAC Systems	If supplementary HVAC design is implemented for the pods, acoustic review of the connection to the lid (including transfer ducts) will be required.

Caveats of Review

- Advice is specific to the Modular Pod System assessed (Phone Booth, 2P Meeting/Foxus and 4-5P Meeting), and is general in nature.
- Independent Acoustic assessments should be carried out on individual scenarios as acoustic results will vary based on the Modular Pod System, base building environment and finishes specific to that project.

Reference

Yogi Kalkunte - Principal - Renzo Tonin & Associates

Appendix 2.0

Cost
Summary by RLB

Parameters of Review

- Pricing is as at February 2023 and does not include price rises beyond this date.
- Comparison of costs is for Supplier 2 pricing options only.
- Allowance for Rw45 acoustic rating included in RLB costs. This is assumed to be a sufficient allowance to achieve min Dw32 rating.
- Like for like material selection, design and scope as per Supplier 2 specification. Flooring is excluded as per Supplier 2 specification. Loose furniture is excluded.
- Installations for Engineering services have been included based on a typical meeting room arrangement and Supplier 2 scope allowances.
- Mechanical services for 6-8P Meeting Room includes for cutting and return duct only. HVAC supply and install is excluded.
- Traditional Construction Cost Analysis undertaken by RLB. Supplier 1, 2 and 3 costs provided by the nominated suppliers.

Reference

Scott Walker, Associate, Rider Levett Bucknall

Pictured

Schiavello - Focus Quiet Room Brochure

Appendix 3.0

Design Considerations
Summary by Bates Smart

1. Suitability of Modular Pods to future workplaces

- Well positioned for acoustic and physical privacy for focus work, private or semi-private meetings, VC and phone calls.
- Demountable nature makes them a logical proposition for workplaces in a time of uncertainty.
- They present a strong value proposition for small meeting spaces (up to 4-5P). Larger than that complexities creep in and the value is not as clear when comparing to traditionally built meeting rooms.

2. Sustainability

- Whilst higher carbon than not building rooms at all (ie. compared to open plan meeting or open desks), the demountability of these systems position them well for a business' long term sustainability credentials, due to ability to relocate and reuse repeatedly (in comparison to traditional built construction).
- Selection of a supplier with a solid reputation, good service offering and quality product is key. As the sustainability benefits are realised through uptake of re-use and relocation.
- Modular construction is generally designed to minimise wastage, work with standard material sheet sizing rather than customised sizing as is common with traditional construction (resulting in greater material offcut wastage).
- Reputable Environmental Certifications available.

3. Cost

- Modular Pods cost less than traditional build for a like for like specification (based on analysis detailed in this paper)
- Traditional construction has ability to "down-spec" which may reduce cost below pods (ie. base level finishes, lower acoustic performance etc), but this would generally be for a resulting product that is inferior to average commercial market expectations.
- Pods are clearly cost effective for the standard design and smaller room sizing. The value proposition can be compromised by customisation and the need for over and above sizing and accoustic requirements when getting about 6- 8P sizing.

4. Acoustics

- Generally equivalent and subject to the same risks and challenges in gaining accurate acoustic testing results and performance metrics.

Pictured

Schiavello - Focus Quiet Room Brochure

Appendix 4.0

Components
Phone Booth

Supplier standard ceiling, lighting and services

Supplier standard framing system

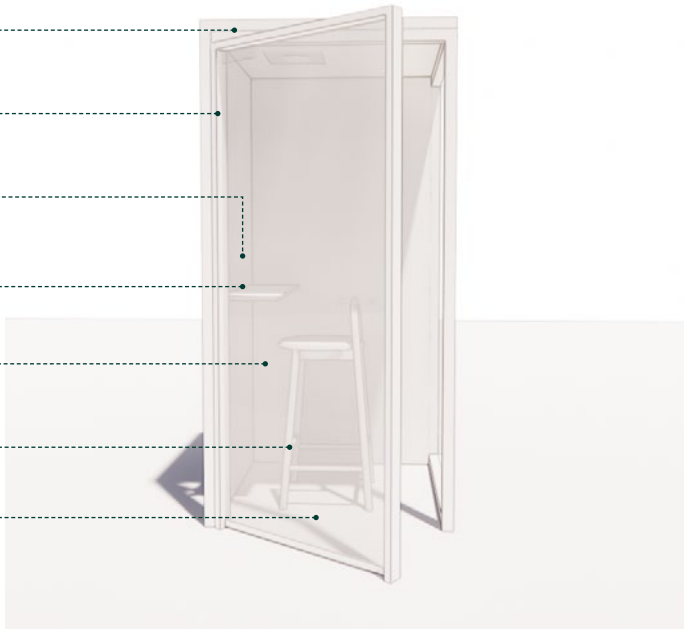
Supplier standard power/data

Joinery Bench

Supplier standard wall finish

Loose furniture (excluded)

Floor finish (excluded)



Phone Booth

1 Person Focus

Supplier standard ceiling, lighting + services

Supplier standard framing system

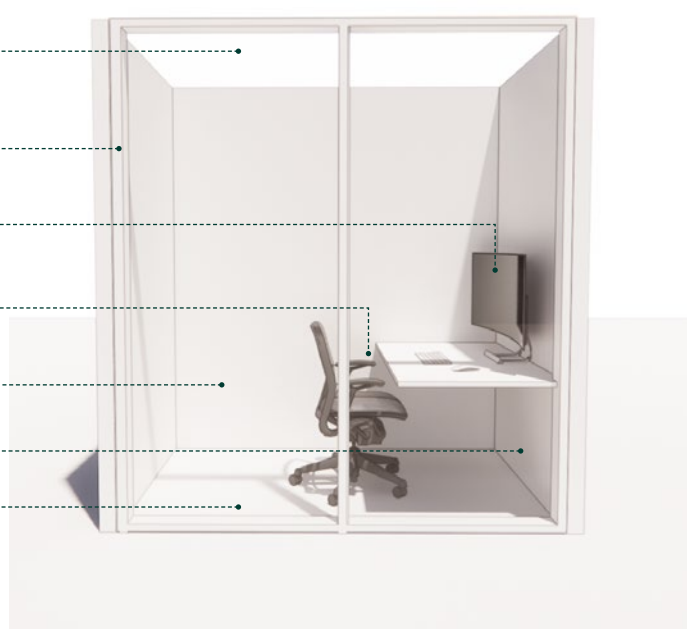
AV (excluded)

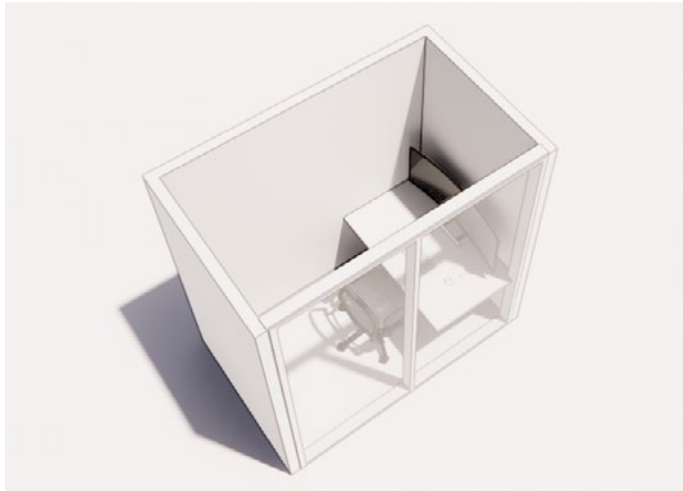
Loose furniture (excluded)

Supplier standard wall finish

Supplier standard power/data

Floor finish (excluded)





1P Focus Booth

2 Person Focus/Meeting

Supplier standard ceiling, lighting + services

Supplier standard framing system

AV (excluded)

Loose furniture (excluded)

Supplier standard wall finish

Supplier standard power/data

Floor finish (excluded)

Alternative Furniture Configurations:

2P Focus/Meeting

4-5 Person Meeting

Supplier standard ceiling, lighting + services

Supplier standard framing system

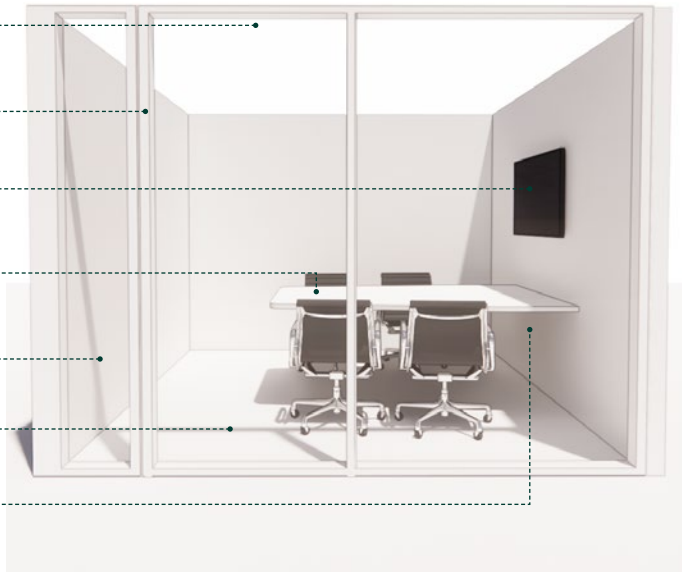
AV (excluded)

Loose furniture (excluded)

Supplier standard wall finish

Floor finish (excluded)

Supplier standard power/data



4-5P Meeting

6-8 Person Meeting

Supplier standard ceiling, lighting + services

Supplier standard framing system

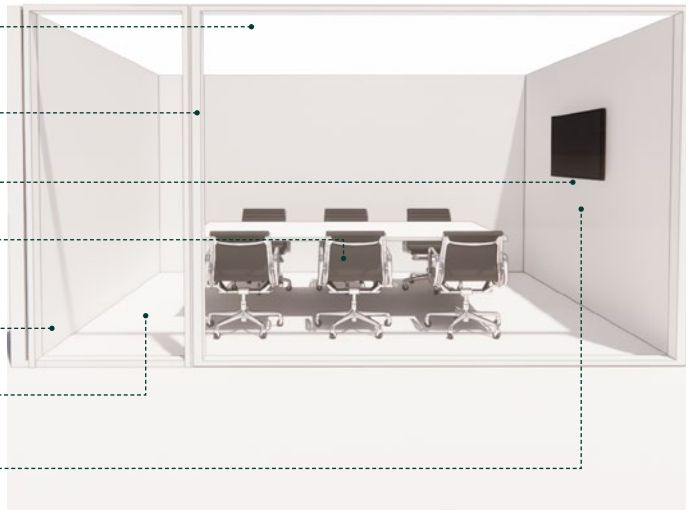
AV (excluded)

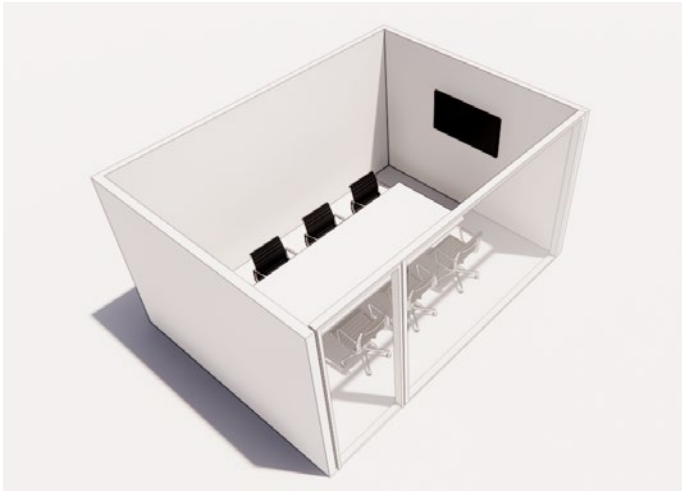
Loose furniture (excluded)

Supplier standard wall finish

Floor finish (excluded)

Supplier standard power/data





6-8P Meeting

Pictured

Schiavello - Focus Quiet Room Brochure

Appendix 5.0

Supplier Comparison

Pod Type	Supplier 1 Cost	Supplier 2 Cost	Supplier 3 Cost
Phone Booth	$ 11,720.00	$ 9,660.00	$ 14,900.00
1P Focus	$ 18,269.00	$ 21,010.00	$ 29,238.00
2P Focus / Meeting	$ 19,809.00	$ 22,670.00	$ 31,414.00
4-5P Meeting	$ 23,596.00	$ 38,550.00	$ 41,848.00
6-8P Meeting	$ 44,100.00	$ 51,080.00	$ 45,113.00

Notes

1. Price Includes: Supply + Installation
2. Price Excludes: GST + Delivery
3. Costs are current as of February 2023 and stand for 6 months
4. All prices to be re-confirmed before issue to client
5. Costs have been supplied by 3 local suppliers based upon their standard kit of parts inclusions for each pod
6. This table does not represent a direct like for like comparison. The materials and finishes vary across each brand and each range. Its purpose is to show the range of prices in the market that underpin the comparative pricing to traditional construction. These prices are subject to market variation and product specification.

Contributors

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This report was researched and written in 2023.

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