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ARCHIDEX 2026

可持续影响设计：每一个决策都至关重要



开启隐含碳的对话

去年，PMBA 在 ARCHIDEX 分享了我们的可持续发展历程，以及我们为行业带来的低碳解决方案。今年，我们则带着不同的目的再次参与展会——倾听不同声音、交流观点，并共同探讨产业如何携手降低隐含碳。

首场行业对话《**Designing for Sustainable Impact: Decisions That Matter**》邀请了 GreenRE Sdn. Bhd. 执行董事 Ir. Ashwin Thurairajah，以及 CH&I Architecture Sdn. Bhd. 与 BGreen Associates Sdn. Bhd. 董事 Ar. Michael Ching，共同探讨设计初期的每一个决策，如何影响建筑物的整体碳足迹。



一切始于思维

整场讨论中，最令人印象深刻的观点是：可持续发展并非始于施工阶段，而是始于最初的设计决策。越早将隐含碳纳入考量，项目团队便拥有更多机会，在材料尚未选定之前，就从源头降低建筑对环境的影响。



好的决策，需要好的数据

建筑师唯有掌握可靠且透明的数据，才能作出更明智的材料选择。讨论中强调了环境产品声明（*Environmental Product Declaration, EPD*）的重要性。作为经过第三方验证的环境数据，EPD 能帮助项目团队更客观地比较不同材料，并为设计决策提供可信的依据。



每个人都是关键的一环

降低隐含碳并非某一个专业或机构的责任，而是整个产业共同努力的目标。从制造商、建筑师、材料供应商、发展商，到认证机构及政策制定者，每一方都在推动低碳建筑中扮演着重要角色。唯有透过知识共享与跨领域合作，才能共同迈向更加永续的建筑未来。

随着「铝业新循环 *Next Cycle of Aluminium*」持续推进，本次对话传递了一个清晰的信息：

真正有意义的改变，始于更深入的交流，也始于每一个更好的决策。

撰写：Branda Yap

ARCHIDEX 2026

更好的数据，带来更好的行动



Ms. Aida Suryadi, Ramboll

每一种材料，都有属于自己的“碳故事”

每一种建筑材料，在运抵施工现场之前，便已产生碳排放。从原材料开采、生产制造到运输，每一个阶段都会留下碳足迹。

随着建筑节能技术不断提升，运营碳逐渐降低，隐含碳在建筑整体碳足迹中的重要性也日益提升，因此，了解材料背后的碳影响已成为低碳建筑不可忽视的一环。

如果说，更好的决策是降低隐含碳的第一步……

那么，我们又如何确定自己作出了正确的选择？

带着这个问题，PMBA 在 ARCHIDEX 2026 举办了 Pocket Talk 及第二场 Industry Dialogue，邀请 Ramboll 环境策略师 Ms. Aida Suryadi，以及 CREAM（Construction Research Institute of Malaysia）资深经理 Ir. Ts. Dr. Hj. Mohd. Khairoldeen，共同探讨如何透过可靠的数据与量化方法，推动建筑业迈向更低碳的未来。



Ir. Ts. Dr. Hj. Mohd. Khairoldeen, CREAM

无法量化，就无法改善

要降低隐含碳，首先必须看得见它。讲者分享了生命周期评估（Life Cycle Assessment, LCA）及环境产品声明（Environmental Product Declaration, EPD）等工具如何将碳排放转化为可量化的数据，让项目团队能够比较不同材料的环境影响，并将可持续性纳入材料选择与设计决策之中。

建立属于马来西亚的碳数据

讨论中也提到，建立更完善的本地排放因子（Emission Factors）及提升数据透明度，对推动我国建筑业低碳转型至关重要。

拥有更具代表性的本地数据，不仅能够提高碳评估的准确性，也能协助产业在材料选择、设计及项目规划过程中，作出更有依据的决策。

随着 ARCHIDEX 2026 的讨论不断深入，一个共同的信息也愈发明确：

迈向低碳建筑，并非单靠任何一个组织就能完成，而是需要透过协作、透明的数据，以及知识共享，共同推动产业迈向更永续的未来。

撰写：Branda Yap

什么是隐含碳

看不见的碳

当我们谈到建筑物的碳排放时，首先想到的往往是建筑投入使用后的用电、空调及日常运营所产生的排放。

然而，一栋建筑的碳足迹，其实早在投入使用之前就已经开始。

从原材料开采、产品制造、运输，到施工建造，每一个阶段都会产生温室气体排放，这些在建筑投入使用前所产生的排放，统称为隐含碳（Embodied Carbon）。

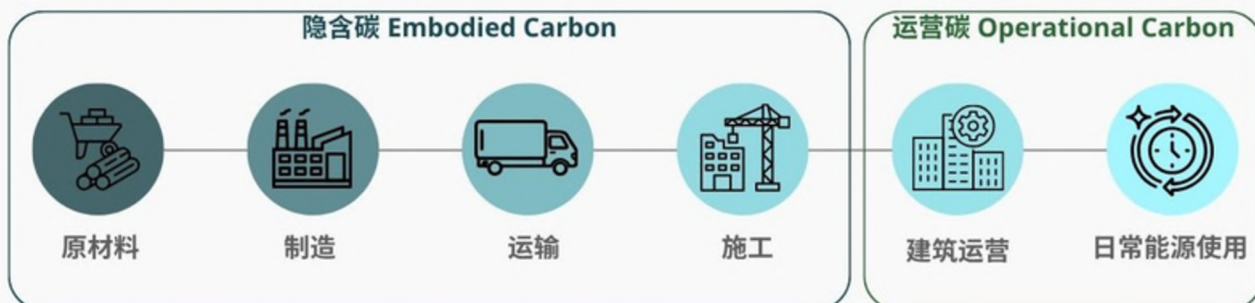
为什么现在越来越关注隐含碳？

过去，建筑减碳主要着重于降低运营碳（Operational Carbon），例如提升能源效率、采用再生能源等。这些措施至今仍然十分重要。

然而，随着建筑越来越节能，运营阶段的碳排放逐渐下降，隐含碳在建筑整体碳足迹中的占比却越来越高，因此也成为建筑业迈向低碳发展的重要课题。

每一种材料，都有属于自己的“碳旅程”

一种建筑材料的故事，并不是从它运抵施工现场才开始。从原材料开采、生产制造、运输到施工，每一个阶段都会产生环境影响，并共同构成其隐含碳。



了解材料的整个生命周期，有助于我们在材料选择、设计及施工阶段作出更明智的决策，从源头减少碳排放。

在 ARCHIDEX 2026 「铝业新循环 *Next Cycle of Aluminium*」主题下，PMBA 邀请多位业界专家共同探讨一个重要课题：

“ 我们如何透过更好的决策，共同打造低碳建筑环境？ ”

接下来的系列分享中，我们将进一步探讨思维（Mindset）、量化（Measurement）与数据（Data）如何成为推动低碳建筑发展的关键力量，共同迈向更可持续的未来。



撰写：Branda Yap

ARCHIDEX 2026

Designing for Sustainable Impact - Decision That Matter



Starting the Conversation on Embodied Carbon

Last year, PMBA came to Archidex to share our sustainability journey and the solutions we have developed. This year, we returned with a different purpose - to listen, exchange ideas and explore how the industry can work together to reduce embodied carbon.

Our first Industry Dialogue, **“Designing for Sustainable Impact: Decisions That Matter”**, brought together Ir. Ashwin Thuraurajah (*Executive Director of GreenRE Sdn. Bhd.*) and Ar. Michael Ching (*Director of CH&I Architecture Sdn. Bhd. and BGreen Associates Sdn. Bhd.*) to discuss how early design decisions shape a building's carbon footprint.



It starts with mindset

One message resonated throughout the session: Sustainability doesn't begin during construction - it begins with the very first design decisions. Considering embodied carbon early gives project teams more opportunities to reduce environmental impact before materials are even selected.



Good decisions need good data

Architects can only make informed material choices when reliable information is available. The discussion highlighted the importance of verified certifications, such as Environmental Product Declaration (EPDs), which provides verified environmental data to support better decision-making.



Everyone has a role

Reducing Embodied carbon is not the responsibility of one profession alone. Manufacturers, architects, suppliers, developers, certification bodies and policymakers all have a part to play. By sharing knowledge and working together, the industry can move towards more sustainable building.

As we continue the Next Cycle of Aluminium, one message was clear:

Meaningful change begins with better conversation - and better decisions.

Author: Branda Yap

ARCHIDEX 2026

Better Data Leads to Better Action



Ms. Aida Suryadi, Ramboll

Every material has a carbon story

Every building material carries carbon emissions before it even reaches a construction site. As operational emissions continue to decrease, understanding embodied carbon is becoming increasingly important.

If better decisions are the first step towards reducing embodied carbon...

How do we know we are making the right ones?

That question became the focus of our Pocket Talk and Industry Dialogue, featuring Ms. Aida Suryadi (Environmental Strategist of GBIF, GreenRE AP at Ramboll) and Ir. Ts. Dr. Hj. Mohd Khaiolden (Senior Manager of CREAM).



Ir. Ts. Dr. Hj. Mohd Khaiolden, CREAM

We can't improve what we can't measure

Tools such as Life Cycle Assessment (LCA) and Environmental Product Declaration (EPDs) help turn carbon into measurable information. With reliable data, sustainability becomes something project teams can compare, evaluate and improve.

Building Malaysia's carbon data

The discussion also highlighted the importance of strengthening local emissions factors and improving data transparency. Better local data will support more accurate carbon assessment and enable the industry to make more informed decisions.

As the conversation at ARCHIDEX continued, one message became increasingly clear:

The future of sustainable construction will not be built by one organization - but through collaboration, transparency and shared knowledge.

Author: Branda Yap

EMBODIED CARBON

The Carbon We Don't See

When we think about carbon emission from buildings, we often think about electricity use, air-conditioning and daily operations.

But a building's carbon story begins long before people step inside.

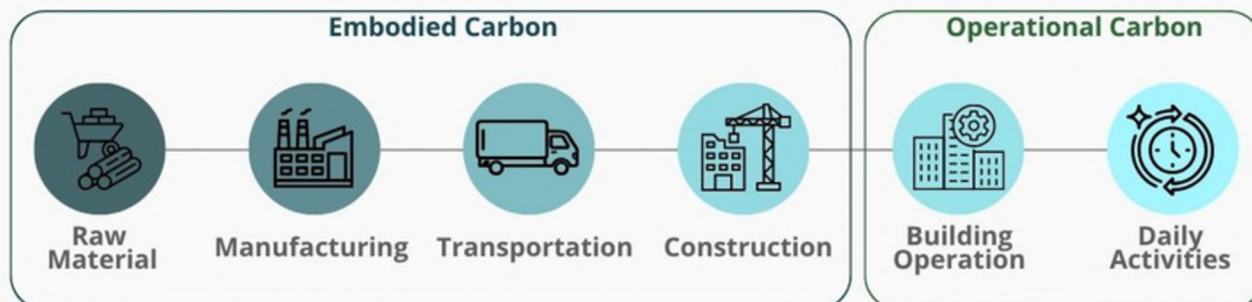
Before a building is completed, emissions have already been generated from the materials used to create it - from extracting raw materials, manufacturing products, transporting them and constructing the building. These emissions are known as **Embodied Carbon**.

Why Does Embodied Carbon Matter Now?

For many years, the focus of building decarbonization has been on reducing operational carbon through energy efficiency and renewable energy. These efforts remain important, however, as buildings become more energy-efficient, embodied carbon represents an increasingly significant part of the overall carbon footprint.

Every Material Has a Carbon Journey

A material does not begin its story when it reaches a construction site. From raw material extraction and manufacturing to transportation and construction, every stage leaves an environmental footprint and contributes to its embodied carbon.



Understanding this journey allows the industry to identify opportunities to make better decisions - from material selection to design and construction.

At Archidex 2026, under the theme "Next Cycle of Aluminium", PMBA brought together industry experts to explore an important question:

“ How can we make better decisions for a lower-carbon built environment? ”

Further exploration is well needed on how sustainability begins with the right mindset, how carbon can be measured, and why reliable data is essential in shaping the future of construction.



Author: Branda Yap

做时间的朋友—— 从“交付订单”到“交付信任”



人物专访 — 吕彩云



“站在2026年的节点回望，我在这的十九年，不仅仅是一段职业履历的叠加，更是一场关于认知重塑与自我迭代的漫长修行。如果要用一个词来概括这段旅程，我想那不是“管理”，而是“连接”——连接客户与公司，连接过去与未来，连接商业理性与人文温度。”



一、认知的跃迁：从“单点执行”到“全局经营”的思维破局

“我的岗位是从基层的商务跟单员到现在商务经理，历经三大不同商务业务阶段。”回顾职业生涯的起点，吕彩云对商务工作的最初认知，建立在一种朴素而踏实的“单点任务闭环”之上。

2007年将加入澳美时，她主要负责跟进英国及欧洲客户的订单，工作重心高度聚焦于保障交期、处理出货与客诉。在那个阶段，评判工作好坏的标准简单而直接：只要每一笔订单顺利履约、按时出货，便达成了目标。

然而，随着2016年业务触角延伸至汽车零部件领域，这种线性思维遭遇了挑战。

“汽车零部件客户对质量标准、交付稳定性、追溯体系、批量波动管控要求极高。这段经历让我意识到，交付不只是时间问题，背后牵动整条供应链，单一订单风险会持续传导上下游，不能只盯着眼前交期。”

这种焦虑迫使她从关注“点”转向关注“线”。她开始深刻理解到，交付不仅仅是时间的兑现，更是整条供应链稳定性的投射。任何一个微小的疏忽，都可能在千里之外引发连锁反应。这标志着她正式进入了“链条协同期”，思维开始从单一的订单交付向复杂的供应链协同延伸。

真正促使她完成认知质变的，是2024年全面承接某家居战略客户。面对客户采用的长期框架合作、滚动需求预测及标准化体系考核，吕彩云坦言，刚接手时自己仍带有过去的跟单思维，习惯于被动承接订单，结果很快发现这容易造成产能错配和新项目筹备滞后。现实的碰壁倒逼她必须跳出舒适区。

“过去只思考‘怎么把这一单做好、准时交货’；现在必须思考如何对齐客户中长期需求，联动生产、采购、品控，平衡客户目标、供应链负荷与公司盈利目标，提前布局新品导入、产能规划、成本优化，规划整条业务线未来增长路径。”

这段挑战彻底重塑了她的管理哲学。在她看来，普通商务解决的是眼前的订单问题，而商务管理者的领导力，则是跳出订单本身，打通客户战略需求与公司内部运营，搭建稳定可持续的合作模式。这不仅是职位的晋升，更是一场从“执行者”向“经营者”的深刻蜕变。

二、经营的哲学：结构性降本实现"可负担性"与"利润"双赢

在配合家居客户需求过程中，吕彩云面临的最大课题是如何在激烈的市场竞争中保持盈利。她并没有选择简单的价格战，而是提出了一套基于"结构性降本"的经营哲学。

“想要平衡客户提出的可负担性与企业合理利润，单纯直接降价不可持续，我们坚持依靠前置产品设计优化、供应链协同实现结构性长效降本。”她认为，真正的降本不是压榨供应商或降低品质，而是跳出现有的盘子里“切蛋糕”，转而通过优化流程、提升预测准确率、减少库存积压来“把蛋糕做大”。

她带领团队深入分析每一笔订单的全生命周期成本，从包装方案的改良到物流路径的优化，甚至参与到客户产品的早期设计阶段（EVI），从源头消除浪费。这种做法实现了看似矛盾的双重目标：一方面，通过效率提升降低了总成本，让客户感受到了"可负担性"；另一方面，通过减少隐性浪费和异常损耗，保住了公司的利润空间。她用行动证明，“降价不等于亏损，降本不等于劣质”，商务不仅仅是成本的承担者，更是价值的创造者。

三、双向成就：十九年扎根，信任是最珍贵的回报

十九年扎根于此，除去薪酬的回报，吕彩云认为这段旅程中最珍贵的收获，是公司持续提供的成长舞台与充分信任。

从最初跟进英国客户的跟单工作，到接触各类海外客户、汽车零部件供应业务，再到全权承接家居战略客户，公司始终愿意把更重要的业务交付给她。这种信任并非盲目，而是建立在一次次实战的磨砺之上。公司给予了她试错的空间和成长的耐心，让她在真实的业务炮火中持续拓宽视野，最终完成了从“订单执行者”到“业务管理者”的蜕变。企业给予信任，而她则以绝对的忠诚与专业确保每一个承诺落地，也正是这份羁绊，支撑着她持续保有工作的热情。

四、未来期许：给供应链人们的话

站在2026年的当下，面对AI技术的冲击和全球供应链的重构，吕彩云对年轻的供应链人有着殷切的期许。她总结了四项底层认知，希望后来者能少走弯路：

- 保持好奇，拥抱变化：不要把自己定义为“做表的”或“发货的”，要始终保持对新技术、新商业模式的好奇心，工具在变，但解决问题的逻辑不变。
- 深入一线，拒绝空想：所有的数据都来自现场。不懂生产工艺、不懂仓库运作，就做不好供应链管理。脚底沾泥，心中才有数。
- 利他思维，成就彼此：供应链是环环相扣的，只有上下游都赢了，自己才能赢。在这个生态里，自私是最大的短视。
- 长期主义，延迟满足：不要急于求成，能力的积累需要时间。像种树一样扎根，才能在未来抵御风雨。

十九年，足以让一个青涩的职场新人，沉淀为从容笃定的管理者。从单点执行到全局经营，她完成了一次漂亮的职场突围。未来的路依然漫长，但对于这位已经学会与时间共舞的行者来说，在时间的刻度里，所有的深耕与沉淀，都有了回响。

撰写：祝宇琪

MAKING FRIENDS WITH TIME — FROM "DELIVERING ORDERS" TO "DELIVERING TRUST"



FEATURE INTERVIEW — JOAN LV



"Looking back from 2026, my 19-year journey has been about continuous reinvention. If I had to summarize it in one word, it wouldn't be 'management,' but 'connection'—bridging clients with the company, the past with the future, and business logic with human warmth."



I.A Cognitive Leap: From "Single-Point Execution" to "Holistic Business Mindset"

"My role evolved from a grassroots sales coordinator to a Sales Manager, spanning three distinct business phases." Reflecting on the beginning of her career, Joan Lv's early understanding of sales was built on a simple premise: closing the loop on individual tasks.

When she joined PMI in 2007, she managed orders for UK and European clients. Her focus was strictly on delivery deadlines, shipments, and claims. Success was binary: if every order shipped on time, the goal was met.

However, expanding into automotive parts in 2016 challenged this linear thinking.

"Automotive clients demand rigorous quality standards, delivery stability, traceability, and volume control. I realized delivery isn't just about time; it's about supply chain stability. A single order risk can ripple upstream and downstream. You can't just stare at the deadline."

This anxiety shifted her focus from "points" to "lines." She understood that delivery is a reflection of the entire supply chain's health. A minor oversight miles away could trigger a chain reaction. This marked her entry into the "Chain Collaboration Phase," extending her mindset from simple order fulfillment to complex supply chain synergy.

The true qualitative shift came in 2024 when she took full charge of a strategic home furnishing client. Facing long-term framework agreements and rolling forecasts, she initially fell back on her old "order-taker" habits, leading to capacity mismatches and project delays. Reality forced her out of her comfort zone.

"In the past, I asked, 'How do I execute this order well?' Now, I must ask, 'How do we align with the client's mid-to-long-term needs?' It requires linking production, procurement, and quality control to balance client goals with our profitability—planning new product introductions, capacity, and costs to map out future growth."

This challenge reshaped her management philosophy. Ordinary sales solve immediate order issues; sales leadership looks beyond the order itself to bridge client strategy with internal operations, building sustainable partnerships. It was not just a promotion, but a metamorphosis from "Executor" to "Business Operator."

II. Business Philosophy: Structural Cost Reduction for a Win-Win on "Affordability" and "Profit"

Facing fierce competition with home furnishing clients, Joan's biggest challenge was maintaining profitability without engaging in a race to the bottom. She proposed a philosophy of "Structural Cost Reduction."

"We moved beyond simple price negotiations to deeply engage in the client's R&D and design phases. By optimizing materials and processes at the design stage, we achieved a 'win-win' on affordability and profit."

She emphasized that true cost reduction is not about squeezing margins, but about eliminating waste and enhancing efficiency through technological innovation and lean management. "We don't just offer a price; we provide a value chain solution."

III. Leadership: From "Controlling" to "Empowering"

As her responsibilities grew, Joan's leadership style also evolved. She shifted from a "controller" to an "enabler."

"I used to focus on monitoring every detail. Now, I focus on building systems and nurturing talent. I want my team to understand the 'why' behind the 'what,' empowering them to make decisions and take ownership."

IV. Future Outlook: Embracing Change, Staying True to the Mission

Looking ahead, Joan is optimistic yet vigilant. She sees digital transformation and sustainability as key trends shaping the future of the industry.

- **Stay Curious, Embrace Change:** Don't define yourself as just a "scheduler" or "shipper." Stay curious about new tech and business models. Tools change, but the logic of problem-solving remains constant.
- **Go Deep, Reject Armchair Strategy:** All data comes from the field (Gemba). If you don't understand production processes or warehouse operations, you can't manage the supply chain. Get your feet dirty to keep your head clear.
- **Altruism Achieves Success:** The supply chain is interlinked; you only win if the upstream and downstream win. In this ecosystem, selfishness is the greatest short-sightedness.
- **Long-Termism, Delayed Gratification:** Don't rush. Capability takes time to accumulate. Root yourself like a tree to withstand future storms.

Nineteen years is enough time for a green rookie to mature into a composed and steadfast manager. From single-point execution to holistic business operation, she has completed a remarkable professional breakthrough. The road ahead is still long, but for this traveler who has learned to dance with time, every moment of deep plowing and settling down will eventually find its echo.

Author: Zoey Zhu

精准 · 高效 · 进步

聚焦模具 部门

打造卓越之利器

我们的模具团队负责设计、制造和维护保障生产顺利运行的关键设备。我们打造的每一套模具都以卓越品质、持久耐用和持续改进为核心，精益求精。

我们的使命



提供创新的模具解决方案，最大限度提升生产效率、设备正常运行率与安全水平——立足当下，面向未来。

我们的流程



- 设计 | 精密设计，卓越性能。
- 制造 | 精工制造，品质卓越；严格测试，确保可靠。
- 支持 | 精心维护，保障稳定运行；持续优化，提升生产效能。

我们的团队



专业 · 敬业 · 专注解决方案。我们的团队精益求精，重视每一个细节，坚守每一个交付期限。

**携手同行，保障生产
持续高效运转。**



安全第一

我们始终守护员工安全，确保生产流程安全可靠。



品质至上

我们始终坚持最高标准，精益求精，确保每一项工作都达到卓越品质。



CONTINUOUS
IMPROVEMENT

我们勇于突破现状，持续改进，力求每天进步。



BUILT TOGETHER

协作与尊重，推动我们共同迈向成功。

精密模具 · 卓越成果
立足本地制造 · 服务全球市场

作者: Jorgina James

PRECISION. PERFORMANCE.
PROGRESS.

TOOLING DEPARTMENT IN FOCUS

OUR PARAGRAPH TEXT

Our tooling team designs, builds, and maintains critical equipment that powers production. Every tool we create is engineered for quality, durability, and continuous improvement.

OUR MISSION



Deliver innovative tooling solutions that maximize production performance, uptime, and safety – today and tomorrow.

OUR PROCESS



- **DESIGN** | Engineered for precision, built for performance.
- **BUILD** | Crafted with quality, tested for reliability.
- **SUPPORT** | Maintained for uptime, optimized for results.

OUR TEAM



Skilled. Dedicated. Solutions-minded. Our team takes pride in every detail and every deadline.

**TOGETHER, WE KEEP
PRODUCTION MOVING.**



**PRECISION TOOLS.
POWERFUL RESULTS.**

BUILT HERE. DELIVERED EVERYWHERE.

Author : Jorgina James



SAFETY FIRST

We protect our people and our processes.



QUALITY ALWAYS

We build to the highest standards in everything we do.



CONTINUOUS IMPROVEMENT

We challenge the status quo to get better every day.



BUILT TOGETHER

Collaboration and respect drive our shared success.

挤出型材只是起点，适配方案才是门槛

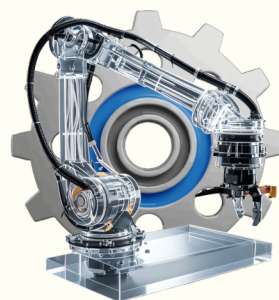
——第六届AIDC液冷供应链峰会参展观察

近期，我司亮相第六届国际AIDC液冷供应链峰会。作为数据中心与储能热管理领域年度最受关注的行业盛会，本次峰会汇聚了国内主流算力设备商、储能集成商、液冷方案商及核心材料供应商。两天展期里，我司展台接待了数十位产业链上下游技术负责人与采购决策者，在一场场开门见山的对话中，我们捕捉到一个明确信号：储能热管理市场的竞争逻辑，正在从“产能规模”转向“精密制造能力”。

一、展台上的第一道考题：壁厚公差，还能不能再薄？

展会期间，一个反复出现的场景令我们印象深刻：多家储能集成商的技术负责人走到我司展台，没有寒暄，开门见山便问——“你们的液冷板壁厚公差能做到多少？还能不能再薄？”

这绝非简单的尺寸追问。在与客户的深入交流中我们发现，下游的选型逻辑已发生根本性转变：他们正在把精密流体系统的制造标准，向上游铝挤压供应链迁移。不具备“高精密挤压+配套深加工”能力的企业，正在被挤出核心供应链。



二、AI高密齿散热：算力基建的“利润高地”与材料多级演进

本次峰会最火爆的议题，毫无疑问是AI算力散热。

论坛上，一个数据被反复提及：随着AI服务器单机柜功率密度突破120kW，单纯风冷已难以覆盖全部散热需求，风冷与液冷结合的混合散热方案正在成为行业主流。但无论散热路径如何组合，高密齿散热型材的需求都在持续放大——但市场对散热材料的需求并非单一维度的“铝挤压包打天下”，而是呈现清晰的多级演进态势：

1. 材料端：从单一铝挤走向多元竞合

峰会技术分论坛上，3D打印、增材制造、PEEK（聚醚醚酮）等新兴材料与工艺频频被提及。在论坛分享中，某设备商展示了采用3D打印成型的复杂拓扑优化散热结构，可在局部热点区域实现传统挤压无法达到的异形流道设计，现已成功服务金融、AI客户的案例；PEEK材料则凭借极低的导热系数，在特定绝缘隔热场景中找到了差异化应用。

但需要强调的是：这些技术目前主要聚焦于“局部补位”而非“整体替代”。3D打印受限于成本与量产效率，更适合小批量、超复杂结构的打样验证；PEEK定位为隔热而非导热，与铝挤压的散热主赛道并不重叠。在大批量、高一致性、成本可控的核心散热路径上，铝挤压高密齿型材仍是不可替代的基本盘。

2. 加工端：后工艺升级反向定义挤压标准

更值得关注的是加工端的变革。在我司与设备展商的深度交流及论坛分享中，我们注意到：

随着液冷冷板流道设计日趋复杂、密封要求从“防漏”升级为“零气泡”，真空钎焊凭借无焊剂残留、焊缝致密度高、耐压能力强等优势，正在成为高端液冷冷板的首选焊接工艺。

这对铝挤压企业提出了新的前置要求：型材的微观组织必须更均匀、表面油污与氧化层必须更洁净，否则后续精加工，比如焊接过程中一次合格率将大幅下降。换言之，挤压环节的工艺纪律，正在被下游精密加工工艺的升级反向定义。

三、从“材料供应商”到“精密交付伙伴”：我司的能力锚点

展会上反复被追问的材料极限能力、开模能力、精密加工能力——这三道考题指向同一个结论：储能热管理供应链的材料需求，已不再是“能不能挤出来”，而是“如何适配产品需求调整生产方案”。

这正是我司近年来持续重投入的方向：

- **自主模具车间与快速开模能力**：内部自有模具车间，配备五轴CNC、慢走丝线切割、日本进口电火花等精密加工设备，确保模具精度与寿命的稳定可控；同时，资深模具设计师团队结合模拟挤压软件，在开模前即可对流变成形过程进行仿真预判，大幅降低试模次数，缩短新截面开发周期，帮助客户抢抓窗口期；
- **精密深加工配套交付**：依托配套的精切、CNC加工及表面处理能力，实现一站式精密交付，帮助客户缩短供应链层级、降低装配偏差风险。

在铝挤压企业生产要求越来越精益求精的市场竞争中，单点挤压能力的优势已不够用，“材料+快速开模+精密深加工”的方案级适配能力，以及快速响应、提供适配客户生产需求的解决方案，才是真正决定供应商能否留在核心供应链的通行证。

“

随着隐性需求日益转化为明确标准，我们的定位也愈发清晰：我们不再仅仅是基础材料供应商，更要成为值得信赖的合作伙伴，为客户提供可靠且量身定制的解决方案。

撰写：祝宇琪

FROM BASELINE TO DIFFERENTIATOR: TAILORED SOLUTIONS IN LIQUID COOLING SUPPLY CHAINS

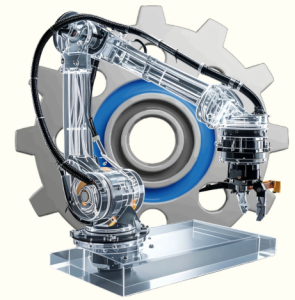
OBSERVATIONS FROM THE 6TH AIDC LIQUID COOLING SUPPLY CHAIN SUMMIT

We recently exhibited at the 6th International AIDC Liquid Cooling Supply Chain Summit, a premier industry event for data center and energy storage thermal management. Through direct technical exchanges with upstream and downstream decision-makers, a clear market signal emerged: the competitive landscape in energy storage thermal management is shifting from production capacity to precision manufacturing capabilities.

1. The Primary Benchmark: Tighter Wall Thickness Tolerances

Technical leads from major energy storage integrators consistently prioritized one metric: What are your liquid cooling plate wall thickness tolerances, and can they be reduced further?

This reflects a fundamental shift in downstream sourcing criteria. Precision fluid system manufacturing standards are being pushed upstream. Suppliers lacking **high-precision extrusion integrated with deep-processing capabilities** are being phased out of core supply chains.



2. AI High-Density Fin Cooling: Value-Added Segments & Multi-Tier Material Evolution

AI compute cooling dominated the summit. With AI server cabinet power density exceeding 120 kW, hybrid air-liquid cooling is becoming the industry standard. Demand for high-density-fin extrusion profiles is surging, but material requirements are evolving across multiple tiers:

- **Material Tier: Multi-Technology Co-Opetition**

Emerging processes like 3D printing (AM) and PEEK were frequently discussed. AM enables topology-optimized, complex flow channels for localized hot spots. PEEK serves specific thermal insulation needs. However, these are localized supplements, not wholesale replacements. Constrained by cost and throughput, they cannot replace aluminum extrusion for high-volume, high-consistency primary cooling paths, which remain irreplaceable.

- **Processing Tier: Downstream Requirements Dictate Upstream Standards**

As cold plate flow channels become more complex and sealing standards escalate to "zero-bubble," vacuum brazing (valued for flux-free residue and high weld density) is becoming the preferred joining method. This dictates stricter upstream prerequisites: aluminum extrusions must feature uniform microstructures and ultra-clean surfaces. Otherwise, first-pass yield in downstream welding drops significantly. **Extrusion process discipline is now strictly driven by downstream precision processing requirements.**

3. From Material Supplier to Precision Delivery Partner

Customer inquiries regarding material limits, tooling, and precision processing confirm one reality: supply chain requirements have evolved from "can you extrude it?" to "can you tailor production to our application?"

This aligns with our strategic investments:

- **In-House Tooling & Rapid Die Development:** Equipped with 5-axis CNC, slow-wire EDM, and Japanese-import EDM, supported by extrusion simulation software. This virtual forming analysis minimizes trial iterations, accelerates new cross-section development, and shortens time-to-market.
- **Integrated Precision Deep-Processing:** In-house precision cutting, CNC machining, and surface treatment capabilities enable one-stop delivery, reducing supply chain tiers and minimizing assembly deviation risks.

In today's market, single-point extrusion is insufficient. **The integration of "material + rapid tooling + precision deep-processing" to deliver application-specific solutions is the ultimate credential for remaining in the core supply chain.**

“

As implicit requirements become explicit standards, our role is clear: we transcend the role of basic material suppliers to be a trusted partner providing reliable, tailored solutions.

Author: Zoey Zhu

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——项目管理部

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——Project Management Department