

# THE FUTURE OF SUSTAINABLE YACHT DESIGN

WORKSHOP 2

WHITEPAPER



F/YACHTING



# EXECUTIVE SUMMARY

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The second collaborative workshop between F/YACHTING and Water Revolution Foundation continued the mission to identify actionable solutions for more sustainable yacht interiors. Key industry stakeholders—designers, new build & refit shipyards, project managers and suppliers, focused through workshops on advancing innovations through closer, in & outside project collaboration, and lifecycle thinking. Discussions highlighted the need for clearer project briefs, early alignment, improved project communication, systemic change in material selection and design-for-refit principles and an industry-wide benchmark that defines environmental ambition levels of designs.

Breakout sessions tackled four challenges: 1) client briefing & project ambition setting, 2) communication between key project partners, 3) design and build with refit in mind, and 4) balancing materials and functionality. This whitepaper presents key takeaways, workshops session breakdowns and proposed actions.

## KEY TAKEAWAYS

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- **Material Database Optimisation:** To optimize the material selection process, by developing a smart-tagged material database. This database would organize materials by type and application, and importantly, suggest alternatives without restricting designer creativity. To further incentivize more sustainable choices, the database would include environmental impact data and associated offset costs. Initially, this would be a valuable tool for industry professionals for the use for more conscious client proposals.
- **Design for Refit:** Yachts have long lifespans, but components are being replaced along the way. Design & build should account for future refits to minimize complexity, time, cost, and impact later in the yachts' life.



# KEY TAKEAWAYS CONT.

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- **Creating a New Narrative for Sustainable Design:** To make design presentations more compelling, we need a new narrative that highlights what makes a yacht more environmentally advanced. Sustainably sourced materials offer a naturally more engaging story. Descriptions of new concepts and recently launched yachts should be significantly enriched by detailing the environmental innovations. While always acknowledging that energy consumption of operations is the primary source of pollution, this shouldn't limit discussions around more sustainable interior innovations.
- **Interior Sustainability Rating System:** To encourage a holistic approach to sustainable interior design, an interior rating system was discussed. This system would promote thinking in terms of total design concepts rather than zooming in on individual materials. This would create ease with understanding how innovative the interior is as a whole and easier to indicate an ambition level as design brief to work with, an environmental budget if you will.
- **From "Sustainable" to "Smart Innovation":** The current narrative around "sustainable materials" often faces challenges, being perceived as implying lower quality or higher costs. Furthermore, while clients may not always be driven by sustainability alone, they are highly attracted to smarter interiors and excited by new innovations.
- **Driving Eco-friendlier Material Adoption:** Without regulations or pollution levies, choosing more eco-friendly interior materials is largely a moral argument, which is difficult to scale. Creating industry standards and a rating system would offer a more compelling, objective rationale for innovation. While more regulatory guidance was deemed necessary, self-regulation is preferred to avoid unsuitable mandates, despite its challenges.



# WORKSHOP: GROUP ONE

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## Owners Questionnaire for Briefing and Mandate

Elaborating on the first item of the designers protocol, “define the level of ambition for the project on a scale from 1-5”, it is probably clear what 1 is and what 5 is, but what about 2, 3, 4. Designers, shipyards and project managers can better work together if the owners brief and subsequently their mandate or boundaries between them are well defined. This group explored whether it is useful to have a set of standard questions that will be answered at the very beginning of a project, to be better aligned throughout the project to avoid discussions and different perceptions of the owner briefs along the way.

**A reality check:** There is not always an owner involved, the brief might also come from a yard that builds series or on spec, so it better be called a “project brief”. Some obvious elements were the timeline, budget per m2 and interest in alternative, more environmental conscious options. The first point of contact is often the client rep, who is looked at for clear briefings on behalf of the client. However, the client rep might not be as open to alternative ideas as hoped for, if that could form a risk for his/her responsibility for the end result. The client rep can make a big difference in the room for innovation and interest in alternatives, even without the client's direct involvement.

**Visible vs Invisible:** A distinction was made between visible and invisible areas. For the latter there is more freedom to innovate as it is less client driven and more part of the build process, so called, silent solutions. These are also likely to be cost savings. Projects might be one-of-a kind, but the process doesn't need to be that way. Standardisation and best practices are already small wins to getting a lower footprint, for instance in waste reduction, regardless of the choice of finish.

**Feedback is no criticism:** Post-delivery, as well as outside project innovation was also strongly supported. The request to be involved earlier doesn't seem realistic, which leaves room for improvement around identifying this at the end of each project and carry the learnings into the next. Feedback loops are critical for that, and a format for this is most welcome to identify which topics should structurally be evaluated to improve on environmental impact of interior creation and installation.

# WORKSHOP: GROUP TWO

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## Communication Between Designers, Yard and Vendor

This group examined project communication across three phases: pre-project, during-project, and post-project, and investigation into systemic issues affecting budget, timelines, and environmental impact.

### Pre-project phase

Early engagement of all stakeholders was identified as a crucial factor. Interior outfitters are often brought in too late, resulting in design missteps, cost inefficiencies, and missed opportunities for innovation. Designers and contractors must move from siloed approaches toward co-development. A key insight was that outfitters bring valuable expertise beyond joinery; such as engineering, procurement, and technical planning, and can enhance project efficiency when included from the beginning.

### During-project phase

Significant waste stems from a mismatch between specified panel sizes and actual material availability. Designers may unknowingly create inefficiencies by not aligning their concepts with real-world constraints of natural materials like leather or marble. This disconnect increases waste, drives up costs, and fosters mistrust between project partners. Early, transparent discussions around materials, supported by sample sizes, pricing, and availability, are essential to reducing impact. This could be avoided by the creation of guidelines outlining design/build specs check points and sustainable material alternatives.

### Post-project phase

Currently, there is no industry-standard process for reviewing completed projects. By the time a yacht nears delivery, key personnel have often moved on, and valuable insights are lost. Internal improvements happen within companies, but the sector lacks cross-project learning. A structured, repeatable post-project review format could help share lessons, improve practices, and reinforce joint sustainability goals for future projects.

### Proposed solutions:

Formalise early-phase alignment protocols involving designers, outfitters, and shipyards. Educate the value chain on the use of regenerative natural materials and promote sustainable alternatives with a focus on waste and cost reduction. Develop a post-project review process to capture and share lessons learned. Shift the narrative from “sustainability” to “smart, innovative, efficient interiors”.

# WORKSHOP: GROUP THREE

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## **Bridging Rational and Emotional Values in Yacht Design and Lifecycle Thinking**

This workshop brought together design, build, refit, and supply to address an often-overlooked but important dynamic in yachting: the tension (and potential harmony) between rational decisions (cost, function, environmental impact) and emotional drivers (aesthetics, experience, desire). The goal was to explore how these forces shape decisions, and how collaboration across the value chain can create better outcomes for owners, the environment, and the industry's perception.

**Emotional value drives the sale, but can block change:** There was a shared recognition that yachts are emotional objects first, and rational products second. Many clients are driven by aesthetics and luxury, not lifecycle thinking. With the sentiment that yachts are not a product you need, but rather a symbol of freedom, status and desire. This emotional priority makes it hard to introduce changes that would challenge aesthetic norms, especially if they also raise costs or introduce new constraints. Even sustainable innovations can be rejected unless they align with the emotional logic. Perceptions may also deviate from facts.

**Rational thinking is present, but struggles to land:** Many builders and refitters try to apply rational frameworks like cost savings, easier maintenance, lower emissions, but find they're not persuasive unless presented with hard data or strong narratives. Owners are told that certain alternative choices, while in build may be more expensive, the resell opportunity is higher in the future, and saving time and waste during refit. But without proof in numbers, it is hard to sell.

There seemed also a missed opportunity around what's not visible: Owners tend to spend a large amount of money on interiors, without a focus on what is behind the walls, which has immediate and future financial and environmental implications.

**Late involvement = lost opportunities:** Suppliers repeatedly shared frustration about being brought into projects too late, once engineering is locked in and budgets are frozen. Suppliers stressed that if they were in the room when the designer starts, there would be more room for suggested improvements. "We're ready with better products—but we're not given the space to apply them." Building awareness of these solutions is clearly needed outside projects.

# WORKSHOP: GROUP THREE CONT.

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**We work in silos and it's costing everyone:** Participants noted that designers, builders, and refitters rarely coordinate or understand each other's pressures. Each stage makes decisions that create downstream problems. A concrete example is the missed opportunity to include a service hatch, resulting in increased work and environmental impact when repairs are needed. This led to a recurring insight: the industry lacks a common language, and a protocol.

**Standardisation can drive collective change:** A key proposal was to create an industry-wide protocol or benchmark standard that outlines sustainability and design practices from the start. The sentiment of "if we don't build pressure internally, it will come externally through regulation" was felt through the group. There was reference to the existing crew protocol that focuses on waste and energy management on board a yacht and the focus on the creation of one for design, build and refit.

**Design schools must teach lifecycle thinking:** Several noted the gap between how design is taught and what the industry actually needs and what happens when a repair is needed. There was a focus on the idea of design is not art, so if it can't be built, refitted or maintained, then it is not fit for purpose. Design education must integrate serviceability, modularity, environmental impact, and cost durability, not just aesthetics.

**Refitting teaches what design forgets:** Refit professionals emphasized how much could be learned by involving designers in the refit process. Designing with the end in mind, from disassembly to resale, would save clients money and avoid waste. The overall sentiment was that the focus is not just on sustainability, but rather creating a vessel that is still valuable in many years that is easy to service, refit and sell.



# WORKSHOP: GROUP FOUR

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## Materials vs Functionality

This session explored how to structure a shared database that supports sustainable decision-making in yacht design. Through understanding how a material-based or function-based logic, or a hybrid model would best serve experts in the industry. The key topic was the future structure of a shared Sustainable Material and Solution Library. The goal is to support informed choices by connecting environmental data with functional application and design strategy, to enable a more consistent and scalable adoption of sustainability principles in yacht design processes.

**Material-first vs. function-first logic:** The session explored whether sustainability-oriented decisions tend to begin with specific materials or with component-level needs. While both logics were seen as relevant, the need for flexibility in navigating between them was emphasized. A hybrid structure combining both entry points with strong filtering and tagging systems was widely supported, highlighting the need for cross-navigation between materials and applications to enable both exploratory and goal-driven user journeys.

**Structuring for design practice:** The tool should not merely catalogue materials by their quantitative impacts but should also guide decision-making by integrating product-level strategies (e.g., design for disassembly, modularity, light weighting, material reduction), usage context (e.g., high-touch vs. hidden components, areas requiring acoustic/dampening properties, exposed areas) and, lifecycle factors (e.g., frequency of replacement, maintenance requirements, reuse potential).

It was emphasized that solutions at the product/component level, such as modular panels, multi-material junctions designed for separability, or standardized interior modules play a key role in enabling circularity and selecting a certain type of material over another. This requires standardisation.

**Data, indicators, and communication:** There was consensus on the importance of providing reliable and comparable environmental indicators such as, Global Warming Potential (GWP), recyclability and biodegradability, use of hazardous substances and, energy intensity and water use. Simplifying the user experience through aggregated scores or “sustainability tags” was considered valuable, so long as the methodology remains transparent and traceable. Participants also advocated for the inclusion of qualitative criteria.

# WORKSHOP: GROUP FOUR CONT.

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**Stakeholder needs:** Each user group has distinct information needs and decision criteria. For instance, designers may prioritize aesthetics, texture, and application-specific usability, where engineers require compatibility data and technical specifications and sustainability experts look for verified impact data and certifications.

**Gaps in the current landscape:** Participants identified several application areas where sustainable alternatives are limited, under-documented, or in early development: decking (natural teak, synthetic teak, bio-based solutions), interior adhesives and coatings, fire-resistant and IMO-certified options with low life cycle impact and wall and ceiling coverings for acoustic or tactile performance. A recurring barrier is the insufficient availability of documentation from manufacturers e.g., Environmental Product Declarations (EPDs), sourcing information, energy mix, and recyclability pathways.

**Designer responsibility and workflow integration:** It was noted that sustainability goals are often undermined by late or fragmented material decisions. An example of this is adopting a bio-based fabric that may conflict with flame retardancy regulations or adhesive compatibility if chosen after the design is finalized. Starting from the design intent and considering material systems early on would lead to more coherent and sustainable outcomes. The participants suggested, embedding sustainability checkpoints earlier in design briefs, using the database to identify functional hot spots (e.g., abrasion-prone areas, disassembly-critical components) and providing visual examples and use cases linked to specific strategies.

**Embedding LCA:** The integration of Life Cycle Assessment (LCA) principles is a key requirement for the database. Participants emphasized that material or product choices should reflect not only intrinsic properties but also their performance over the life cycle.

These insights will inform the strategic roadmap for the Material and Solution Library, with the aim of supporting the transition toward more circular and sustainable practices in yachting.

# CONCLUSION

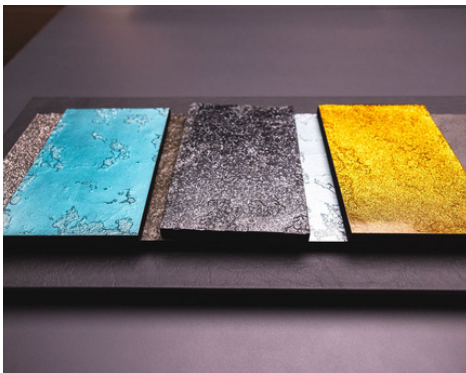
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Throughout the day the collective realisation that transparency is becoming just as important as craftsmanship or customization in this industry was clear. The workshops highlighted the desire to sell beauty, and the need to build better, but it also showed a clear path forward: shared language, early collaboration, and lifecycle thinking. Many teams are capable of delivering more sustainable solutions, but only if they're involved earlier.

**“Today’s owners still value differentiation and personal expression, but increasingly they want to know where things come from, how they’re made and what values they represent. This is where design meets sustainability and accountability.” - Markus Inabnit - F/YACHTING.**

True sustainability requires rethinking materials, construction methods, and supply chains. It is not a compromise but rather a refinement of how luxury can be: thoughtful, intelligent and ethically grounded. This can be achieved by integrating sustainability at the early stages of the process and building strong connections between each step in the value chain. This isn't a linear supply chain, it's a collaborative ecosystem. And such ecosystems thrive on transparency, shared responsibility and open knowledge.

If the industry can connect the emotional with the rational, not as opposites, but as allies, it can build yachts that endure, inspire, and evolve.



## **Combined version below:**

combined the executive summary and key takeaways, but kept the common challenges and solutions separate to the workshop findings

# THE FUTURE OF SUSTAINABLE YACHT DESIGN

WHITEPAPER ON WORKSHOP OUTCOMES



F/YACHTING



# EXECUTIVE SUMMARY

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F/YACHTING and Water Revolution Foundation brought together a cross-section of industry stakeholders for two workshop sessions focused on advancing sustainability in yacht design. The discussions underscored the urgent need for clearer project briefs, early alignment among partners, and stronger communication throughout the design and build process. Participants also called for systemic changes in material selection, the adoption of design-for-refit principles, and the creation of an industry-wide benchmark to define environmental ambition levels. A recurring theme was the shift toward more circular, intelligent, and environmentally responsible yacht design—driven by early collaboration, conscious material choices, and shared standards that support more sustainable construction and operation. Also a new sophisticated narrative was deemed necessary to progress and excite all stakeholders involved.

## KEY THEMES

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**Early Alignment & Collaborative Briefing:** A recurring thread across both workshops was the importance of early engagement among project stakeholders. Designers, outfitters, suppliers, and engineers are too often engaged after design decisions and budgets are locked, undermining innovation and sustainability goals.

**Insight:** Early-phase alignment protocols, including the owner/client briefing stage, can mitigate silos and create space for sustainable alternatives before constraints are embedded.

**Lifecycle Thinking & Design-for-Refit:** Interior components are frequently replaced, yet most designs still focus on initial installation. Builders and refit specialists highlighted that incorporating lifecycle strategies, like modularity, disassembly, and access planning, saves both cost and environmental burden over time.

**Insight:** Design-for-refit is a critical lever for long-term sustainability and should be baked into design education, workflows, and client expectations.

**Materials & Execution Gaps:** Material selection remains a major bottleneck. Challenges include:

- Sourcing sustainable alternatives quickly
- Balancing regulatory demands with sustainability (e.g., fire ratings)
- Lack of manufacturer documentation (e.g., EPDs, recyclability pathways)
- Sample vs. installed material mismatches

**Insight:** Visibility, documentation, and material databases are essential for better decisions. Sustainable alternatives must be supported by verified data and usability within IMO guidelines.

# KEY THEMES

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**Emotional vs Rational Drivers:** Owners and clients make decisions emotionally, prioritising aesthetics and luxury experiences over environmental metrics. However, emotion and sustainability are not incompatible and they must be integrated.

**Insight:** Smart, elegant innovation framed as value-adding storytelling is more persuasive than technical sustainability jargon.

## **Lack of Industry Standards & Feedback**

**Loops:** A fragmented ecosystem and absence of shared standards lead to inconsistencies, inefficiencies, and duplicated mistakes. There is little post-project review or cross-project learning.

**Insight:** Shared protocols, structured feedback, and open knowledge are critical to industry-wide progress.



# KEY OUTCOMES

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**Owners Briefing Tool (Environmental Ambition Scale):** A proposal to develop a questionnaire to define project ambition early, whether led by an owner, client rep, or yard. This includes a scale from 1–5, budget per m2, appetite for innovation, and visibility of advancing features.

- Helps align all stakeholders from day one and manage expectations realistically.

**Sustainable Materials & Solutions Library:** An industry-wide, smart-tagged database that catalogues materials and components by function, lifecycle impact, application context, regulatory status, and availability.

- **Features to include:**
  - Environmental indicators: GWP, recyclability, hazardous substances, water/energy use
  - Filtering by application (e.g., high-touch, hidden areas)
  - Modular strategies (e.g., disassembly, multi-material junctions)
  - Qualitative filters (aesthetics, texture, acoustic properties)
- A flexible hybrid system (material-first and function-first) was seen as most effective.

**Interior Rating System:** This system would assess interiors holistically rather than by isolated materials, allowing teams to indicate ambition levels and guide client decisions. This also serves as an environmental "budget" for the design brief process.

- Encourages design teams to think in terms of total impact rather than green checkboxes.

# KEY OUTCOMES

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**Post-Project Review Framework:** A repeatable format to capture learnings, evaluate performance, and build cross-project insights. This should include material performance, innovation successes, and process gaps.

- Currently, critical lessons are lost as teams disband or shift to other projects.

**Design-for-Refit Protocol:** A checklist and design guide that promotes lifecycle-friendly strategies, such as modular access, service hatches, and standardised mounting systems.

- Refit professionals can contribute greatly to design intelligence if included earlier.

# SOLUTIONS

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## Short-Term

- Prototype the Owners Briefing Tool with selected shipyards/designers
- Develop a version of the Materials Library focused on adhesives, coatings, and decking alternatives
- Host micro-pilots of post-project review templates and gather feedback from builders and outfitters

## Mid-Term

- Formalise and publish a Design-for-Refit Protocol with cross-sector input
- Train design teams and outfitters on using lifecycle tools and sustainability tags
- Expand library coverage with structured input from suppliers and LCA specialists

## Long-Term

- Adopt the Interior Rating System as a voluntary benchmark tool across new builds and refits
- Integrate lifecycle and refit principles into design education curricula
- Standardise early-phase collaboration protocols across shipyards and outfitters.



# CONCLUSION

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The pathway to more environmentally friendly yacht interiors is not blocked by lack of ideas or willingness, but by fragmentation, timing mismatches, and a lack of shared infrastructure. These workshops underscored the industry's readiness and the urgent need for action. Aligning with our Roadmap 2050 target of net-zero emissions by 2050, the yacht design phase is critical. Given that 80% of a yacht's environmental impact is determined during the design phase, conscious material selection and prioritising regenerative natural resources and waste reduction, is crucial for minimising the overall environmental footprint across a yacht's lifecycle.

By reframing sustainability as elegant innovation, developing tools that support smarter choices, and embedding lifecycle thinking throughout design and build processes, the superyacht industry can set a new standard for responsible luxury as the highest form of it.

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