



FUTURE OF LIFE SCIENCE DESIGN TRENDS

Encompassing products, pharmaceuticals, biotechnology and human health solutions, the life science industry is flourishing. HED's scientific workplace design experts have taken a look back on 2022 and are putting forward predictions and lessons learned for 2023 and beyond.

TOP OF MIND DESIGN TRENDS FOR LIFE SCIENCE IN 2023

Technology

Future consideration for robotic conveyance of materials through a facility or across a lab, with facility implications for those routes. Camera and 3D technology placement for principal investigators to "dial in" virtually to oversee a lab environment from afar in VR or via physical proxy such as moving camera on armature. This type of tech exists in some secure labs for robotic armatures to perform functions in real time via human instruction, for example robotic surgery. All of these have layout and equipment placement repercussions from a facilities standpoint.

Work Modes

Altering work modalities, such as work-from-home that is made possible by cloud computing, accessing data remotely, doing computations at home and an influx of AI computation (onsite servers expanding space needs). There is a pressure

and possibility for reduced in-office workforce and following of workplace trends. Many functions such as administration, human resources, marketing, sales, etc. don't enter the lab, the result is science facilities not being full even though some employees need to be in the lab 3+ days a week.

Wellness

We are seeing a lot of healthy laboratories with sustainable materials, biophilic elements and sustainable equipment. Making sure spaces have height adjustable equipment, casework and furniture. Emphasis on incorporating light and air in the design of spaces that are "diverse scientist friendly". There is also a rapid movement towards workplaces being amenity rich, more luxurious furnishings, mixes of space and comfort-driven decisions, lots of light, branding/environmental graphics, bright labs with high ceilings, social spaces and overall culture reflected in spaces throughout. Science workers never really left the office, so the



decisions are not about "bringing them back", but rather using these spaces and amenity offerings to attract the best people through recruitment. Square feet needs will remain the same or may grow with organizational growth, but definitely a need for more inhouse computers (servers to support AI).

DESIGN TRENDS THAT WILL CONTINUE THROUGH 2023.

Expansion space: Projects were built to quickly and cheaply accommodate additions and expansions. Clients expect to expand and grow in place due to the cost of additions to these spaces, so pre-planning is important for savings in the future.

Hybrid spaces: Create opportunities for transitional space and transitional equipment for lab support. In the case of server rooms, they're partially clean and require more air changes.

2022 LESSONS LEARNED FROM RECENT MARKET DISRUPTIONS

1. Keeping in mind costs and lead time disruption. Material cost escalation and supply chain delays are continuing to cause real interruptions and we are not seeing any indication it's going to correct in the next few years. Continuous cost checks are needed, and something that will be important to continue to do throughout the coming years.
2. Some sustainable materials are more available and cost friendly now due to these issues.
3. Due to the high cost of energy, some equipment and monitoring tools are becoming easier to make a case for in a cost reduction discussion (shorter payback periods). For example, in a facility with 70+ fume hoods, our client opted for the more expensive,

more sustainable option because it would pay for itself in energy savings in a much shorter time horizon. In this case, it paid for itself in under 5 years by choosing that option.

2023 CHALLENGES THAT WILL CONTINUE TO IMPACT THE MARKET

One challenge is navigating the softening of the market in developer-led projects due to rising interest rates. This means fewer spec-suite labs are less glamorous per dollar. But organization led projects will continue, and will be spending to attract and recruit. Institutionally, science is typically not impacted by recessions as national labs still have a robust budget for defense, energy research, etc. and most science contracts are lengthy and heavily funded. There is a possibility of more renovations than new builds - which applies to any sector in a recession - which would be more sustainable. And finally, ongoing diversity issues with respect to science professions and life science spaces (See Marilee's lab design article on inclusion/equity [here](#)).



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