L'Oréal's Research & Innovation Center- Where Beauty Meets Scientific Innovation – By Victor J. Cardona

The SEFA Laboratory of the Year® Judging Panel has awarded *High-Honors – Excellence in Adaptive Re-use* to the L'Oréal Research & Innovation Center(R&I) a new state-of-the-art, 257,185 GSF (gross square foot) R&I Center in Clark, New Jersey. This year's Judges were Geo Adam (F. Hoffmann-La Roche AG); Abbie Gregg (AM Tech Solutions); Diane Kase (SmithGroup); Alex Kogan (Rockefeller University); Stuart Lewis (Flad Architects) and Derek Westfall (Tradeline).

The SEFA Lab of the Year® is a global Competition recognizing innovation in laboratory design and excellence in execution. SEFA welcomes submissions from architects, owners and builders of all types of laboratories, located anywhere throughout the world (https://www.sefalabs.com/sefa-lab-of-the-year).

The L'Oréal North America Research & Innovation Center is a campus that features multiple buildings. This redevelopment project involved renovating an existing 157,185 GSF structure and building a new 100,000 GSF addition on an adjacent brownfield. It marked the company's largest-ever investment in an R&I facility, totaling approximately $160 million.

The existing layout made it challenging to create cohesive and efficient workflows. To streamline operations and enhance employee collaboration the company consolidated its facilities into a single redesigned building that contributes to a more sustainable world ecosystem.

As a global leader in haircare, skincare, makeup, fragrance, and augmented beauty, L'Oréal continues to advance science-based innovation through new product breakthroughs. This building serves as the North America research center for L'Oréal's scientific teams, reinforcing a long-standing commitment to advancing beauty, innovation, sustainability, and inclusiveness.

The architect and laboratory planner for the project was S/L/A/M Architects, Glastonbury, CT.

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Project Mission and Vision
L'Oréal's new state-of-the-art R&I Center is the corporation's largest research center outside of France. It brings together over 600 scientists and experts previously spread across five separate buildings. This consolidation brings together hundreds of researchers across diverse scientific disciplines and beauty categories under one roof for the first time. By breaking down physical and functional silos, the new facility fosters greater collaboration, creativity, and speed, enabling teams to deliver safe, high-performance, and responsible beauty solutions with even greater impact.

The Center takes a unique end-to-end approach to innovation by integrating advanced research, early-stage development, and scale-up capabilities through its Demi-grand (micro-factory), and by integrating consumer insights through a dedicated valuation center that can host up to 400 consumers per day. This integration embraces the entire product development process, from ingredient discovery and formulation to product development and scaled production, while maintaining performance, quality, and safety at the heart of the value creation process. The result is a streamlined, more efficient process that accelerates the journey from concept to market, reinforcing L'Oréal's leadership in the fast-paced, ever-evolving beauty industry. In addition, it fosters a healthier, more inspiring workplace.

> "Working within L'Oréal's new R&I Center makes me feel like I am not only part of the future of beauty but actively engaged in shaping it. It's not just the advanced, new facilities we have but also being able to see our entire community in action everyday" - Dakota Piorkowski, Ph.D., Senior Scientist, L'Oréal Groupe

Project Goals
The goal of the project was to create a center with state-of-the-art labs that embody and reflect L'Oréal's powerful brand and culture, and to position the company to compete in the rapidly changing beauty industry. Key goals for the new R&I Center were to:

- Creae a healthy, vibrant workplace with access to natural light for all,
- Connect and engage by optimizing visual connectivity and transparency,
- Create one community with a central hub that brings the community together,
- Provide highly flexible labs without boundaries that facilitate collaboration, and
- Plan for future expansion capacity of the labs.

Planning and Design

> *"The design for the new R&I Center blends innovation, brand identity, and sustainability to create a workplace that truly reflects the company's culture." Robert Pulito, SLAM Architects*

The facility plays a critical role in accelerating talent acquisition, fostering partnerships with leading universities, startups, academics, and vendors.

The site is designed with a strong emphasis on safety, security, and efficiency through the clear separation of all vehicular traffic flows. Each type of traffic—service, visitor, consumer, and general staff—is carefully routed to avoid any crossing paths, minimizing potential conflicts and streamlining access to the facility.

The central entry includes a circular drop-off for ridesharing and visitor parking, with security measures such as boulders, markers, and seat walls. Green screen fencing separates public areas from the secure employee zone. Evaluation and Consumer Center visitors have dedicated access, with parking and easy access to the entrance and company store. A separate driveway for trucks and a service area near the cafeteria handles food deliveries and compost. Tree groves provide shade along an exterior glass façade, while large lawn areas and plazas

encourage gathering and recreation. This integrated site emphasizes efficient flow, biodiversity, and biophilia to support human well-being and sustainability.

The new and existing portions of the R&I Center are seamlessly unified by a consistent stone panel cladding system, accented with warm wood finishes. The asymmetrical placement of windows creates rhythm, texture, and visual intrigue that brings a human scale to the long façade. The refined use of this limited palette of material and color and the building's exterior identity are both sophisticated and understated, embodying L'Oréal's commitment to science, beauty, and nature.

Photo © Paul Burk

Internally, the R&I Center is planned to maximize both spatial efficiency and team collaboration, fostering an environment that supports key adjacencies and streamlines workflows. By collocating all seven Métiers (business units), the layout minimizes distances between people, eliminates barriers, and increases visibility—ultimately fostering collaboration and accelerating innovation. By prioritizing resource sharing and flexibility, the lab space allows for optimized utilization, facilitating cross-disciplinary collaboration.

Central to this design is the integration of office and laboratory spaces. To further promote collaboration and connection, all lab personnel are provided with designated office workspaces, supplemented by a variety of collaborative huddle and conference spaces.

Extensive use of glass walls visually connects these areas, reinforcing L'Oréal's commitment to interdisciplinary collaboration, while natural materials and biophilic elements reinforce a culture rooted in creativity and well-being.

The facility is designed to represent L'Oréal's unique business model and global culture that recognizes, understands, and celebrates the diversity of people and their cultures. Fundamental to the company's success, the facility is devised to be experienced as a journey, filled with vibrant colors, graphics, and images, all reflecting a myriad of global cultures that represent

L’Oréal’s consumer base. These “villages” celebrate cultural diversity, forming a network of localized yet unified environments that elevate the brand’s values. Natural light through the use of clerestory windows is prevalent throughout the facility.

As exterior connections remain central to the experience, the dining area opens onto terraces and vegetable gardens that are inspired by the post–World War II Victory Gardens. The volleyball courts and walking trails invite reflection, fostering a deeper connection to the community and the land itself.

Research and Analytical Lab Flexibility
The highly flexible lab spaces are modular, allowing for maximum efficiency while supporting team-based research. These labs promote synergy, agility, and digital integration, with workstations and lab offices designed for easy adaptation to changing needs.

> *“What makes the space truly unique is that it is located on just one floor, with the goal of enabling employees from all different areas to interact and cross- pollinate ideas. You may be a makeup researcher, but your neighbor on the bench might be in skin care.” - Barbara Lavernos, Deputy CEO of L’Oréal Groupe, Research, Innovation, and Technology.*

Photo © Paul Burk

Collaboration is at the heart of the Center’s design, reflecting a modular open-concept layout and a deliberate shift away from traditional laboratory environments, an approach that aims to break down barriers and encourage engagement across all product lines. By eliminating traditional reagent shelves above the movable benches and confining storage to the perimeter, visibility across the lab is improved, encouraging connection and collaboration among researchers. A flexible overhead utility system, combined with a mobile “hitching post” for lab services, delivers light, power, and ventilation, and enables a wide range of lab bench and workstation configurations.

Consumer Evaluation Center

L’Oréal rigorously evaluates the effectiveness and performance of its products. This includes clinical assessments by experts, evaluations by dermatologists, and advanced instrumental testing methods that provide precise, quantifiable data. Just as critical is real-world feedback. L’Oréal runs an extensive consumer testing program in which participants use new products and share their experiences, ensuring the company remains closely aligned with consumer needs and expectations.

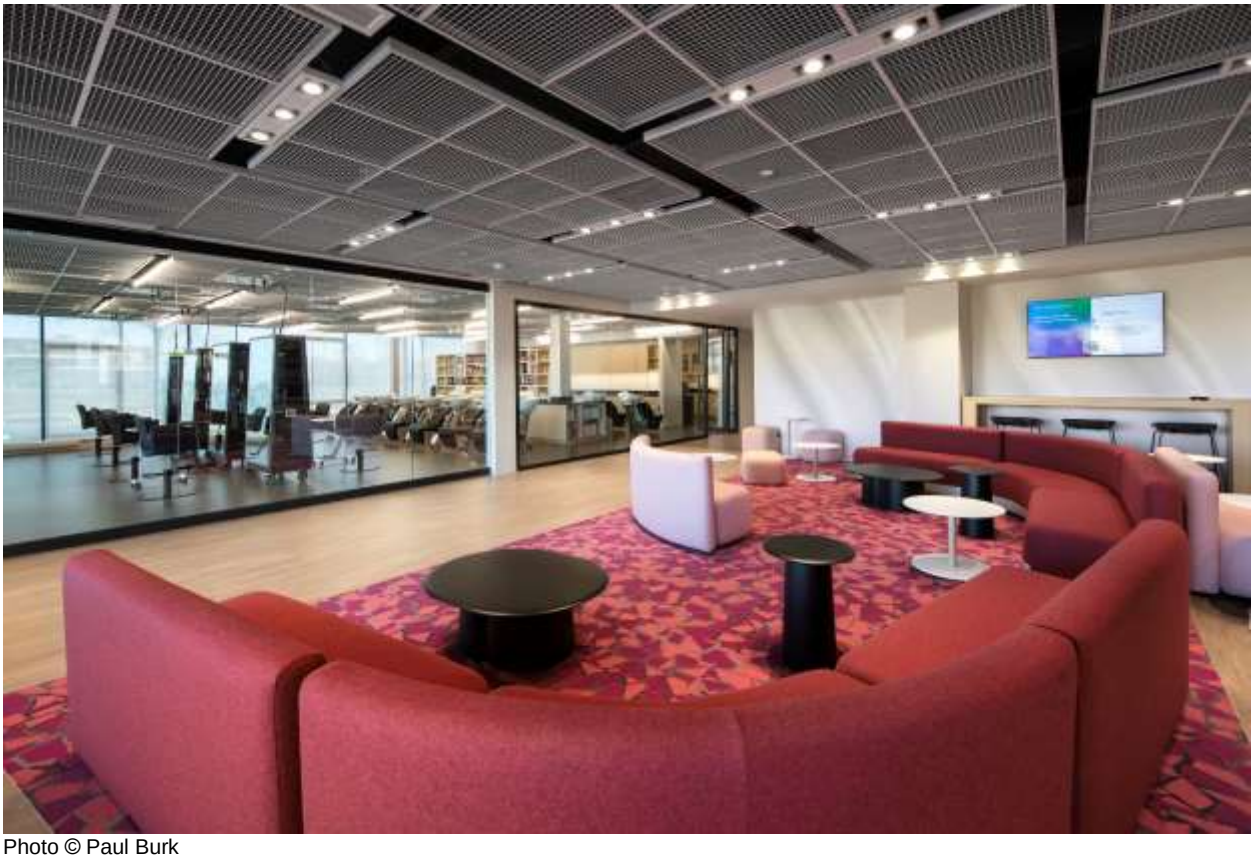

Photo © Paul Burk

At the heart of this approach, the R&I facility features an in-house salon where professional stylists test products on real people to assess performance in authentic conditions. Other rigorous facilities support testing for smell/odor, color, texture, and packaging. The Consumer Evaluation Center, which welcomes up to 400 visitors per day for hands-on product testing, allows consumers to interact directly with employees, allowing for immediate feedback to be given and integrated into the research and development process. This direct-to-consumer connection enables L’Oréal to continuously refine and optimize its offerings, ensuring every product meets the highest standards of quality, efficacy, and consumer satisfaction

Demi-Grand and Warehouse

A comprehensive renovation of approximately 70,000 SF included the relocation and consolidation of the pilot plant and Demi-Grand (DG) facilities, and all support functions. This phase included reconfiguration of processing and filling rooms, relocation and recommissioning of processing and filling equipment within the DG facility, construction of new office space, and the reconfiguration of warehousing space. A new 12,400 SF addition to the east side of the building supports shipping, receiving and facility operations.

Photo © Paul Burk

Office / Administrative

L'Oréal's innovative workplace concept redefines the traditional office, blending functionality with creativity to foster an environment where collaboration and community thrive. The new design accommodates a diverse range of work settings and amenities that inspire spontaneous collaboration, provoke creative thinking, and encourage entrepreneurial behavior.

Photo © Paul Burk

Amenities
At L'Oréal, connection and community are deeply woven into the workplace culture. A central feature of this is the espresso café, a cherished tradition that originated in Paris and is now a staple in all company facilities. This inviting space serves as a daily ritual, where colleagues gather in the morning to connect, recharge, and engage with one another.
Complementing the café is a bright, welcoming cafeteria designed with a variety of seating options and table sizes to accommodate everything from quick lunches to informal team discussions.

Photo © Paul Burk

Sustainability & Wellness
In creating the *L'Oréal for the Future (LFTF)*, the most sustainable L'Oréal facility in North America, four programmatic pillars developed: steward the climate transition, safeguard nature, drive circularity, and support communities. Reinforcing this concept, the new R&I Center has been designed to meet the highest standards of environmental performance, with the purpose of achieving LEED Platinum certification.
The Project's Guiding Principles were:

- Wellbeing – provide a comfortable, healthy, safe environment that promotes pride of place, social engagement, support, and inclusivity,
- Energy – generate net positive resources,
- Carbon – employ no new fossil fuel equipment, and embrace minimal embodied carbon strategies,
- Water – reduce and reuse water consumed by 50%, provide capacity to filter and clean all wastewater,
- Waste – reduce operational waste by 50%, and
- Biodiversity – revitalize and restore the brownfield site through biodiversity.

Sustainable key features include:

- 3.06 MW, 10,000 Photo Voltaic Solar Panels installed on roof and parking canopies, supplying approximately 70% of the site's energy needs at peak consumption. The solar array is supported by a 200kW battery system with four hours of storage capacity,
- BMS and Microgrid systems that digitally integrate all the MEP systems, optimizing thermal comfort and energy efficiency,
- CLT timber decking provides a lightweight and strong structural system with improved dimensional stability,

- Optimize daylight in the building and supplemented with efficient LED lights controlled by a BMS system,
- Composting and recycling facilities to yield zero waste,
- Two stormwater management resources and over 100 native plants, bat houses, and bee hives to support biodiversity on site,
- Adaptive planting to enhance biodiversity in support of wildlife and also for employee relaxation, and
- Indoor and outdoor green spaces to enhance ecological health in the surrounding area.

Energy performance achievements include:

- A 70% reduction in site energy and 45.8% annual energy cost savings over the ASHRAE 90.1 2010 Baseline.
- An 83% energy savings on space heating (natural gas), 38% on humidification, 41% in interior lighting and 90% on heat rejection,
- A 40% reduction in energy use using higher efficiency heating provided by air-to-water heat pumps, VRF systems and electric radiators, and
- Lighting power densities have been designed 27% lower than ASHRAE 90.1-2010 min. requirements, including daylighting controls in all perimeter spaces resulting in 41% interior lighting energy savings over the Baseline Design.

The building generates chilled water through a modular air-to-water heat pump. This system is air-cooled and does not include any cooling tower, resulting in 90% energy savings in heat rejection.

Supporting sustainable transportation and encouraging low-emission commuting, the R&I Center includes bicycle racks and 16 electric vehicle (EV) charging stations enabling employees to charge their vehicles directly with solar energy during daylight hours.

Altogether, the R&I Center exemplifies L'Oréal's vision for a sustainable future, serving as both a hub for scientific innovation and a benchmark for responsible, regenerative design.

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Conclusion

L'Oréal has stayed true to its roots by placing science at the heart of its business model. For L'Oréal, beauty is more than skin deep; it is a powerful force that unites people across cultures and backgrounds, fostering self- confidence, self-expression, and a deep sense of belonging. This enduring belief drives the company's ongoing investment in cutting-edge research and technology, which has most recently been represented by its state-of-the-art North America Research & Innovation Center. This facility reinforces L'Oréal's unwavering commitment to pioneering the future of beauty through science, innovation, and a relentless pursuit of excellence.

Project Data

Building Area	257,185 gsf (23,949 gsm)
Assignable Area	183,791 nsf (17,075 nsm)
Building Efficiency	72.7%
Lab Area	44,482 nsf (4,133 nsm)

- 26,000 SF modular research laboratory, for 7 Métiers, including Fragrance, MTI, Hair Care, Hair Color, Hair Forme, Makeup, and Skin Care,
- 18,000 SF of analytical labs

Lab Office	41,090 nsf (3,817 nsm)
Office Area	21,657 nsf (2,012 nsm)
Consumer Evaluation Center	17,500 nsf (1,626 nsm)
Demi-Grand (Mini-factory)	16,000 nsf (1,484 nsm)
Warehouse	29,000 nsf (2,694 nsm)
Cafeteria/Kitchen	14,120 nsf (1,312 nsm)

Project Team

Client	L'Oréal USA S/D Inc., New York, NY
Owner's Project Manager	Watchdog, Philadelphia, PA
Architect and Lab Planner	S/L/A/M Architects, Glastonbury, CT
MEP Engineers	Phase 1 – SNC Lavin Engineers, Exton, PA Phase 2- WSP, New York, NY
Construction Manager	Phase 1 – Gilbane Building Company, Providence, RI Phase 2 – Structure Tone, Woodbridge, CT

About the author

Victor J. Cardona is a retired architect and laboratory designer based in Michigan and Florida. He served as a senior planner, vice-president, and Director of Laboratory Planning Group for SmithGroup. A past member of SEFA's Advisory Board, he has been a past judge in the LOY competition. He has published many laboratory-planning articles and presented these at national and international forums. His projects have been recognized by multiple entities, including four LOY awards. He now spends most of his time sailing on Lake Michigan.