REPORT

CONVERTING OFFICES TO LIFE SCIENCES:

A GUIDE TO DIFFERENT LAB FIT-OUT SCENARIOS

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Credit: Bulb Interiors and BW: Workplace Experts

INTRODUCTION

Life sciences is a rapidly growing and truly global industry with a unique resilience to recession. In the UK, the sector had an annual turnover of £89 billion in 2020 and employs 268,000 people in 6,620 businesses (Department of Health & Social Care, Bioscience and Health Technology Sector Statistics 2020).

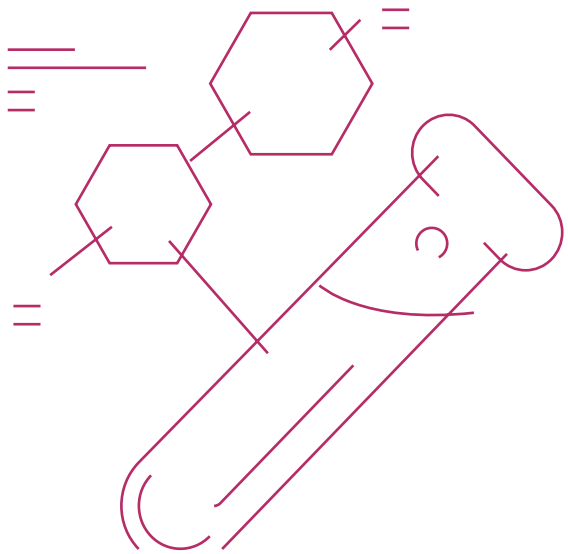
An increase in government spending, combined with the impacts of the COVID-19 pandemic, has seen a change in dynamics, disrupting the real estate sector. There is a huge demand for lab space which cannot currently be satisfied in the traditional golden triangle of London, Oxford and Cambridge. Existing buildings previously occupied as offices have been targeted to satisfy this demand. Unlike private residential developments, they can bring much needed employment to our urban centres. This presents a significant opportunity for real estate professionals to demonstrate innovative and sustainable solutions that will allow the life sciences sector to grow.

The BCO's Guide to Specification of Offices has provided the definitions of shell & core, CAT A and CAT B providing a reliable framework and reference point for professionals over many years and continues to adapt to the challenges presented by the changing workplace (see our recent returning to the office insight). But building laboratory space has many variables that do not naturally fit within these traditional definitions, so the industry is evolving to provide a framework to meet the demand of tenants. Occupiers can range from start-ups, that may require fully fitted incubator space, to an SME requiring the equivalent of 'CAT A' space to develop their research, through to established pharmaceuticals with developed research and manufacturing requirements.

Our insight provides a high level view of the life sciences sector and an order of cost and programme for each of the fundamental classifications for lab space.

GLOSSARY OF KEY TERMS

ACRONYM	DEFINITIONS
GMP	Good manufacturing practice (GMP) is the minimum standard that a medicines manufacturer must meet in their production processes. Products must be of a consistent high quality, be appropriate to their intended use and meet the marketing authorisation (MA) requirements or product specification.
CL (or BSL)	Containment Level (CL) or biosafety level (BSL) is a set of biocontainment precautions required to isolate dangerous biological agents in an enclosed laboratory facility. The containment levels range from the lowest level 1 to the highest level 4.
ACH	Air Changes Per Hour (ACH) is a metric that tells us how many times a heating, ventilation, and air conditioning (HVAC) device can fill up the full volume of a room with air.
ACDP	Advisory Committee on Dangerous Pathogens (ACDP) role is to provide scientific advice on the risks of exposure to various pathogens.
COSHH	Control of Substances Hazardous to Health (COSHH) is the law that requires employers to control hazardous substances.
ISO	The International Organization for Standardization (ISO) develops and publishes international standards. The clean rooms are classified by ISO levels 1-8 with decreasing complexity.



BUILD TYPE DEFINITIONS

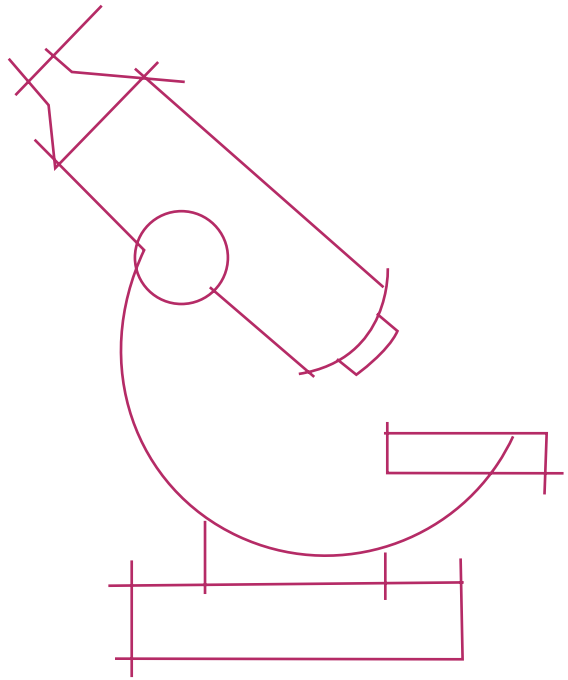
These are the typical classifications of lab fit-out. The performance criteria and specification of the space must reflect the requirements of the science/research that is being carried out.

BUILD TYPE	DEFINITIONS
Wet lab	A laboratory space where chemicals, drugs, or other material or biological matter are tested and analysed requiring water, direct ventilation, and specialised piped utilities. Wet labs are classified into CL1 to 4 based on the hazard group biological agents handled.
Wet lab CL1	CL1 or Containment Level 1 labs are designed to handle and contain hazard group 1 biological agents that are unlikely to cause human disease.
Wet lab CL2	CL2 or Containment Level 2 labs are designed to handle and contain hazard group 2 biological agents that can cause human disease and may be hazardous to employees.
Wet lab CL3	CL3 or Containment Level 3 labs are designed to handle and contain hazard group 3 biological agents that can cause severe human disease and may be a serious hazard to employees. It could spread to the community, but there is usually effective prophylaxis or treatment available.
Dry lab standard	A laboratory space that is specific to work with dry stored materials, electronics, and/or large instruments with few piped services. The laboratories defined by this space type may require accurate temperature and humidity control, dust control, and clean power.
Dry lab clean room	A laboratory space to work on industrial products that are sensitive to particulates that gets contaminated or destroyed in contact with pollutants, e.g., medicinal/pharmaceutical products, medical devices, nanotechnology, semiconductor, or electronic products.

LAB SCENARIOS DEFINITIONS

Definitions of shell & core and Cat A for a typical life sciences building with tenants requiring a maximum of CL2 laboratory:

TYPICAL BUILD	DESCRIPTIONS
Lab enabled shell & core	▪ Typically a 'warm shell' provision ▪ Exposed concrete floor and ceiling ▪ M&E plant and ductwork provided for heating and cooling installed to the edge of lettable suites in the risers for tenant connection ▪ Plant for general mechanical ventilation and ductwork installed to the edge of lettable space ▪ Riser and plant space to allow installation of fume cupboard extract and additional laboratory ventilation, if required
Laboratory Cat A	▪ Finishes to interior of internal walls for landlord space ▪ Suspended ceilings in office areas ▪ Office carpet and raised access floor ▪ Suspended laboratory grade ceilings ▪ Laboratory grade vinyl floor covering lab ▪ Laboratory drainage connections ▪ Cooling and heating system ▪ Open plan base lighting solution ▪ Life safety systems (fire alarms and emergency lighting) ▪ Distribution boards ▪ General laboratory ventilation ▪ A minimum level of fume hood extract, plant and ductwork ▪ Basic statutory signage ▪ Basic security system and wire ways



LAB FIT-OUT SCENARIO

Shell & core works exclude general reception, amenity fit-outs, and any other general building refurbishments that may be required to ensure the building meets building regulations and BCO guidance. The below scenario is based on a 100,000 ft² GIA laboratory CAT A fit-out, excluding CAT B and any specialist lab equipment. It achieves 72.5% NIA:GIA ratio with a 60:40 split of labs to office.

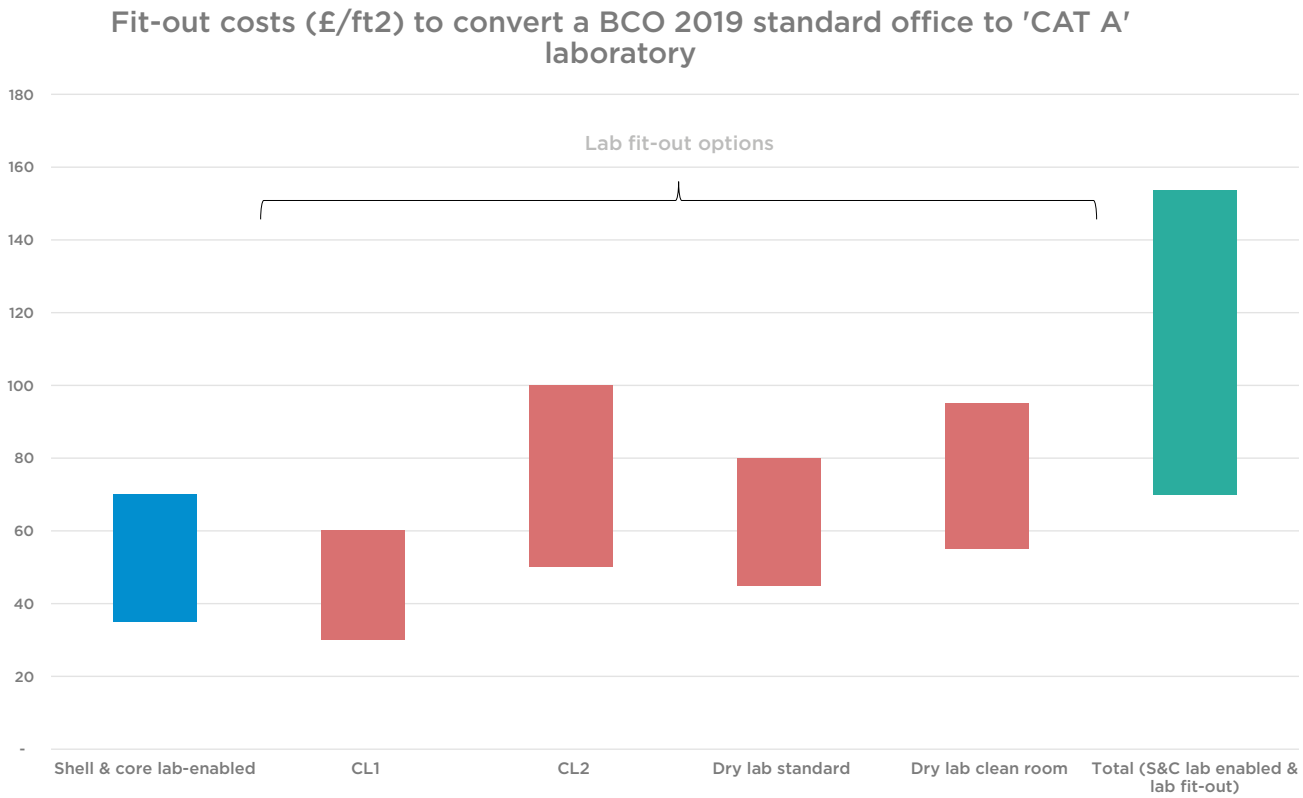
BUILD TYPE	TYPICAL LAB SPEC REQUIREMENTS FOR SCOPE	CAPITAL COST	PROGRAMME	COMPLEXITY	REGULATION
Lab enabled shell & core light refurb	▪ External gas bottle storage, goods access, lab gases, additional riser/corridor space	£35-70/ft²	40 weeks	Medium	▪ ACDP ▪ COSHH
Fit-out wet lab CL1	▪ Basic lab finishes, potential reduced ventilation, lower security and cleanliness requirements ▪ Ceilings and enhanced ventilation not mandatory ▪ Openable windows allowed	£30-60/ft²	38 weeks	Medium	▪ ACDP ▪ COSHH
Fit-out wet lab CL2	▪ Specified ACH rate, access control, cleanliness ▪ Cleanable ceilings, walls, benchtop surfaces, piped gases, fume cupboards, sinks potential fume extract, cryostorage. restricted access	£50-100/ft²	46 weeks	Medium-high	▪ ACDP ▪ COSHH
Fit-out wet lab CL3	▪ Highly complex, specialist works. Usually bespoke for tenant due to the nature of the work being carried out ▪ Unlikely in a city centre office refurbishment	> £200/ft²	> 50 weeks	High	▪ ACDP ▪ COSHH
Fit-out dry lab standard	▪ Cleaner air ▪ Potential temperature and humidity control ▪ Potential higher and cleaner power	£45-80/ft²	30 weeks	Medium	▪ ISO ▪ COSHH
Dry lab clean room	▪ Environmental control plus ISO standard and accreditation ▪ Cleaner air ▪ Temperature and humidity control ▪ Potential higher and cleaner power ▪ Air locks and pressure differentials important achieving the required ISO levels	£55-95/ft²	34 weeks	Medium-high	▪ ISO ▪ COSHH

SUMMARY

The cost of converting a BCO 2019 standard office into a laboratory will likely involve works to the shell & core to facilitate the fit-out of a life science tenant. The fit-out scope varies depending on the tenant company profile and the type of life sciences being carried out within the space.

CL3 and CL4 labs are usually highly bespoke and wouldn't be suited to an office refurbishment, hence their exclusion from this analysis.

Many variables can impact the overall cost of a laboratory fit-out, so careful cost and project management are essential to ensure successful project outcomes.



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- Specification consultancy
- Design management
- Strategic facility management
- Sustainability consultancy
- Contract advisory

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