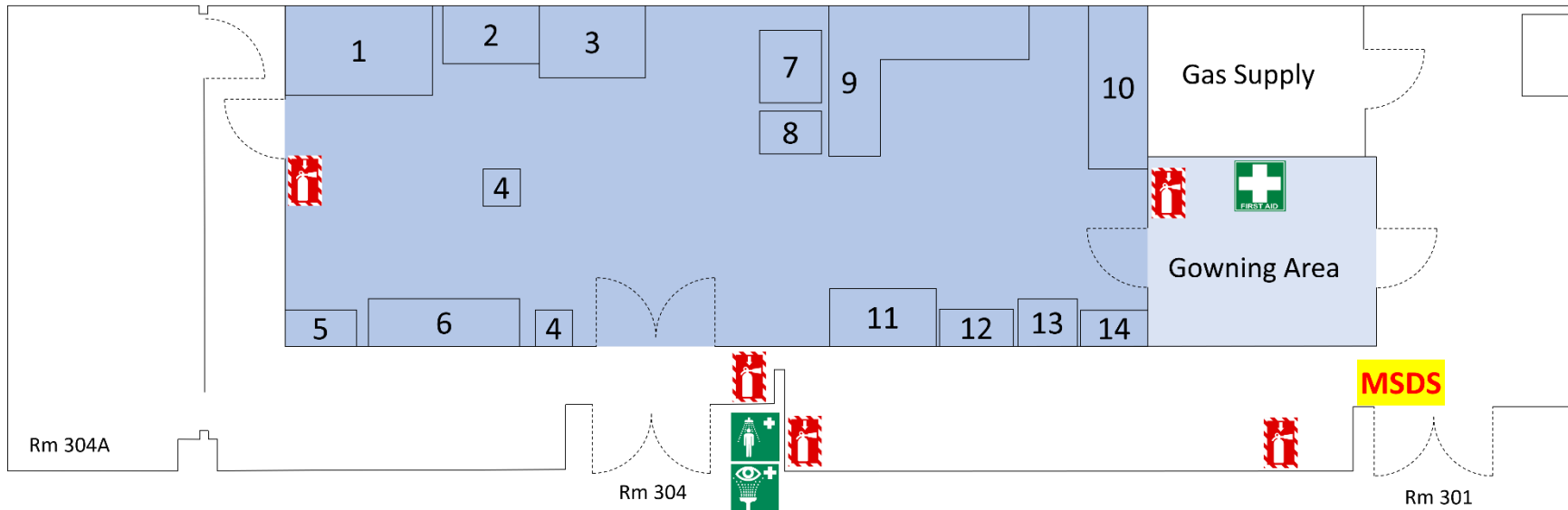


### Cleanroom



- |   |  |
|---|--|
| 1 Field Emission Scanning Electron Microscope | 8 Nano-embosser                                  |
| 2 Ellipsometer                                | 9 Wet Bench                                      |
| 3 Spectrophotometer                           | 10 Low Pressure Chemical Vapor Deposition System |
| 4 Optical Microscope                          | 11 Reactive Ion Etch                             |
| 5 Atomic Force Microscope                     | 12 Thermal Evaporator                            |
| 6 Furnace                                     | 13 Sputtering Tool                               |
| 7 UV Curing System                            | 14 Sputter Coater                                |

### Cleanroom Standards (maximum particles/m<sup>3</sup>)

Class	≥ 0.1 μm	≥ 0.2 μm	≥ 0.3 μm	≥ 0.5 μm	≥ 1 μm	≥ 5 μm	FED STD 209 E equivalent
ISO 1	10	2					
ISO 2	100	24	10	4			
ISO 3	1,000	237	102	35	8		Class 1
ISO 4	10,000	2,370	1,020	352	83		Class 10
ISO 5	100,000	23,700	10,200	3,520	832	29	Class 100
ISO 6	1,000,000	237,000	102,000	35,200	8,320	293	Class 1,000
ISO 7				352,000	83,200	2,930	Class 10,000
ISO 8				3,520,000	832,000	29,300	Class 100,000
ISO 9				35,200,000	8,320,000	293,000	Room air

#### Cleanroom Operation:

The cleanroom contains all of the tools that are sensitive to particle contamination in the lab. Air inside the cleanroom is filtered continuously to remove particles from the air, and by filtering the air in the room the number of “killer” particles can be reduced to a sufficiently low level for the production environment. Cleanroom “Class” dictates the allowed number of particles per cubic foot of air. The cleanroom is also kept at elevated pressure to ensure that particles are swept out of the working space, and not brought in when users enter or leave the environment.