

### Chatham House: Sustainability Oriented Mission

Chatham House has been designed to provide a high-quality indoor environment and to operate on low utility costs, while helping to preserve the environment for future generations. The building was designed to pursue certification by the U.S. Green Building Council, a non-profit organization recognizing the highest levels of green building performance through its LEED™ (Leadership in Energy and Environmental Design) for New Construction Rating System (LEED NC™), Version 4. LEED certification verifies that a building project has adhered to rigorous consensus-based standards for sustainable design.

The LEED certification program is the leading international program for sustainable building design and construction, which is being used in over 170 countries. LEED guides projects to save money, conserve energy, reduce water consumption and drive innovation. Through a rigorous, documented process that relies on performance and measurement, LEED rewards and validates best-in-class building strategies and practices.

Meehan Green served as the LEED consultants throughout the project.

### LEEDv4 New Construction Rating System

LEED-NC is a voluntary, point-based system consisting of nine categories:

1. Integrative Process
2. Location and Transportation
3. Sustainable Sites
4. Water Efficiency
5. Energy & Atmosphere
6. Materials & Resources
7. Indoor Environmental Quality
8. Innovation & Design Process
9. Regional Priority



Projects may receive certification under LEED NC by meeting prerequisites and earning credit points, with ratings of Certified, Silver, Gold, and Platinum available depending on the number of points earned. A project must acquire 40 points to achieve the minimum certification level.

Chatham House is targeting LEED Gold Certification upon completion of the certification process.

#### Certification Levels:

- Certified 40-49 points
- Silver 50-59 points
- Gold 60-79 points
- Platinum 80 points and above



## LEED incorporation to Chatham House

**LOCATION AND TRANSPORTATION:** The Location and Transportation (LT) category rewards thoughtful decisions about building location, with credits that encourage compact development, alternative transportation, and connection with amenities, such as restaurants and parks.

Chatham House is located on Chatham Street in Dublin 2, which is part of the Dublin city centre. This was a previously developed site.

Chatham House is located within a zone of archaeological potential for the historic city of Dublin (Zone Z5: City Centre). According to the Dublin City Development Plan 2016-2022, the aim for that is “to consolidate and facilitate the development of the central area, and to identify reinforce, strengthen and protect its civic design character and dignity.” This location choice of developing in a dense and connected community helps to reduce the environmental impacts of developing on environmentally sensitive lands as well as contribute to Dublin City’s revitalisation.

Chatham House is within 150m of the Luas Green Line, and numerous bus stops are situated within 400m of the site. The building does not offer on-site parking, fully supporting public, active and clean transportation.

**SUSTAINABLE SITES:** The Sustainable Sites (SS) section promotes responsible, innovative, and practical site design strategies that are sensitive to plants, wildlife, and water and air quality. The category also mitigates some of the negative effects buildings have on the local and regional environment.

During the demolition and construction of the site, the project implemented a construction activity pollution plan to reduce pollution from construction activities by controlling soil erosion, waterway sedimentation, and airborne dust to protect the neighbouring properties, local rainwater systems and the site itself via continuous monitoring and protection measure during construction.

An Environmental Site Assessment was completed prior to the construction of Chatham House. This informed several design decisions on the project, such as the incorporation of rainwater harvesting, as well as the optimisation of natural daylight into the spaces.

**WATER EFFICIENCY:** The Water Efficiency (WE) section addresses water holistically, looking at indoor use, outdoor use, specialized uses, and metering. The section is based on an “efficiency first” approach to water conservation.

Chatham House chose a selection of efficient plumbing fittings, fixtures, and equipment to reduce indoor water consumption – without compromising the experience. The building harvests rainwater from the roof to reuse for flushing. With these two strategies the building achieves 38% water reduction. This also contributes to the overall rainwater management of the site helping reduce pressure on the local drainage systems.

**ENERGY AND ATMOSPHERE:** The Energy and Atmosphere (EA) category approaches energy from a holistic perspective, addressing energy use reduction, energy-efficient design strategies, and renewable energy sources.

Chatham House is designed to reduce the environmental and economic harms of excessive energy use by achieving a high level of energy efficiency for the building and its systems. Together with energy efficient mechanical design and equipment choices, LED lighting systems and PV panels on the roof, the building achieves a 29.85% energy cost saving compared to a typical building.

Chatham House integrated a commissioning process to verify that the project's design goals and objectives are met and that the building systems are performing as intended. Going one step further with enhanced commissioning, further oversight and verification policies are incorporated for ongoing quality building control and operations.

**MATERIALS AND RESOURCES:** The Materials and Resources (MR) credit category focuses on minimizing the embodied energy and other impacts associated with the extraction, processing, transport, maintenance, and disposal of building materials.

Chatham House incorporates a waste storage and recyclable collection scheme to reduce the waste that is generated by building occupants and hauled to and disposed of in landfills. By diverting recyclable waste from landfills, buildings help convert recyclables into new products, reducing demand for virgin materials. During construction, a construction and demolition waste management plan was implemented, and waste was sent to recycling facilities. This ensured that waste was diverted from landfills and incineration facilities by recovering, reusing, and recycling the materials.

Chatham House installed products and materials with available life-cycle information and that have environmentally, economically, and socially preferable life-cycle impacts. Over their lifetimes, materials have local, regional, and global environmental effects. Some occur during the harvest, extraction, manufacture, and transportation of materials; others involve construction and operations; still others take place at demolition and disposal. A life-cycle assessment (LCA) examines as many of these environmental effects as possible.

**INDOOR AIR QUALITY:** The Indoor Environmental Quality (EQ) category rewards decisions made by project teams about indoor air quality and thermal, visual, and acoustic comfort. Green buildings with good indoor environmental quality protect the health and comfort of building occupants.

For the best indoor air quality, Chatham House brings in fresh air from the outside through mechanical means to dilute human- and product-generated air pollutants. Proper design and operation of a ventilation system is essential for supporting indoor air quality and plays a fundamental role in creating healthy buildings. Chatham House restricted building materials and products with high VOC content in order to help mitigate associated exposure and health hazards.

Indoor air quality was protected during construction as well, through a combination of strategies such as envelope protection, moisture and dust management, filter replacement, air flush and proper equipment selection.

Chatham House includes indoor environments that promote thermal and acoustic comfort. Optimal thermal conditions are provided to the majority of occupants in support of their health and well-being. The indoor thermal environment is ranked as one of the strongest contributing factors to overall human satisfaction in the built environment. Controlling the thermal environment substantially impacts a building's energy footprint as well.

Acoustically, Chatham House was designed to facilitate comfortable interior noise levels by introducing the specific performance thresholds for background noise levels within specified locations as attributed by internal and external noise sources. When exposure to noise is reduced, occupants are less susceptible to distraction, overall stress, and potential health risks.

**INNOVATION:** Sustainable design strategies and measures are constantly evolving and improving. New technologies are continually introduced to the marketplace, and up-to-date scientific research influences building design strategies. The purpose of this LEED category is to recognize projects for innovative building features and sustainable building practices and strategies.

Chatham House incorporated a green building education signage. A comprehensive signage program is built into the building's spaces to educate the occupants, guests, and visitors of the benefits of green buildings.