

CHP Lifecycle Modelling Workbook

Structured lifecycle planning for LIFT buildings managed by Community Health Partnerships.

1. Purpose of This Workbook

This workbook provides a structured approach to lifecycle modelling for LIFT buildings. It supports CHP teams in planning, prioritising, and forecasting refurbishment and replacement works across the estate.

It is designed to help you:

- Assess asset condition
- Forecast lifecycle costs
- Prioritise refurbishment works
- Identify compliance risks
- Support long-term investment planning
- Align lifecycle decisions with operational pressures

2. Lifecycle Modelling Framework

2.1 Core Lifecycle Stages

1. **Asset Identification**
2. **Condition Assessment**
3. **Risk Scoring**
4. **Cost Forecasting**
5. **Prioritisation**
6. **Programme Development**
7. **Review & Adjustment**

2.2 Asset Categories

Use these categories to structure your model:

- Building fabric
- Mechanical systems (HVAC, boilers, pumps)
- Electrical systems
- Ventilation systems
- Water systems
- Fire safety systems
- Medical gas systems

- External works
- Specialist equipment
- Energy systems (LED, controls, insulation)

3. Asset Condition Assessment

3.1 Condition Rating Scale

Use a standard 1–5 scale:

Rating	Description
1	Excellent – no issues
2	Good – minor wear
3	Fair – moderate deterioration
4	Poor – significant deterioration
5	Critical – failure likely

3.2 Evidence Sources

- Site surveys
- Contractor reports
- PPM records
- Compliance audits
- User feedback
- Photographic evidence

4. Risk Scoring Model

4.1 Risk Dimensions

Score each asset on:

- **Compliance risk** (HTM, statutory)
- **Operational risk** (impact on services)
- **Safety risk**
- **Financial risk**
- **Reputational risk**

4.2 Risk Matrix

Combine condition + risk to produce a lifecycle priority score:

$$\text{Lifecycle Priority} = \text{Condition Score} + \text{Risk Score}$$

Typical ranges:

- **2–4:** Low priority
- **5–7:** Medium priority
- **8–10:** High priority
- **11+:** Critical priority

5. Cost Forecasting

5.1 Cost Inputs

- Replacement cost
- Refurbishment cost
- Labour cost
- Access cost
- Compliance cost
- Contingency (10–20%)

5.2 Forecasting Periods

CHP lifecycle models typically use:

- **1-year operational plan**
- **5-year short-term plan**
- **10-year medium-term plan**
- **25-year long-term plan**

6. Prioritisation Matrix

6.1 Priority Categories

- **Critical:** Immediate action required
- **High:** Action within 12 months
- **Medium:** Action within 1–3 years
- **Low:** Action within 3–5 years
- **Deferred:** Beyond 5 years

6.2 Example Matrix

Asset	Condition	Risk	Priority	Action
AHU	4	5	Critical	Replace
Fire doors	3	4	High	Refurbish
Flooring	2	2	Low	Monitor

7. Energy Efficiency Integration

7.1 Energy Opportunities

- LED upgrades
- HVAC optimisation
- Insulation improvements
- Smart controls
- Heat recovery systems

7.2 Carbon Reduction Impact

Include carbon impact scoring to support NHS Net Zero goals.

8. Lifecycle Programme Development

8.1 Programme Components

- Annual lifecycle works
- Major refurbishments
- Compliance-driven works
- Energy efficiency projects
- Backlog reduction
- Contingency planning

8.2 Programme Sequencing

Sequence based on:

- Operational impact
- Access requirements
- Contractor availability
- Budget cycles
- Compliance deadlines

9. Mid-Year Lifecycle Review

CHP teams typically adjust lifecycle plans mid-year based on:

- Updated condition data
- Budget changes
- Operational pressures
- Compliance findings
- Contractor performance

10. Reporting Templates

10.1 Lifecycle Summary Report

- Executive summary
- Priority works
- Cost forecast
- Risk overview
- Programme timeline

10.2 Asset-Level Report

- Asset description
- Condition score
- Risk score
- Cost estimate
- Recommended action
- Evidence

11. Workbook Tables (Copy-Ready)

Asset Register Table

| Asset | Location | Category | Condition | Risk | Cost | Priority | Notes |

Lifecycle Forecast Table

| Year | Planned Works | Cost | Risk Reduction | Dependencies |

Energy Efficiency Table

| Measure | Cost | Savings | Carbon Impact | Priority |

12. Final Review Checklist

- All assets assessed
- Evidence collected
- Risk scores validated
- Costs forecasted
- Priorities agreed
- Programme sequenced
- Governance approved
- Mid-year review scheduled