Appendix A1 – Algorithm Logic Summary

Module: LCM Lease – Predictive Lease Risk Scoring

This algorithm powers the LCM Lease module in LCM Analytics, providing early warnings and intervention recommendations based on the projected risk of individual leases. It combines real estate performance indicators (EPC rating, occupancy trends, rent sensitivity, etc.) with environmental and market factors to produce a Lease Risk Score and actionable guidance. This is part of LCM Analytics' proprietary simulation engine.

Inputs:
- EPC rating (A–G)
- Average void period in months
- Rent uplift risk (0–1)
- Local demand index (0–100)
- Occupancy rate (0–1)

Outputs:
- Lease Risk Score (0–100)
- Recommended Action: Dispose, Monitor, or Retain

```
function calculate_lease_risk(epc_rating, avg_void_months, rent_uplift_risk, local_demand_index, occu

    epc_weight = {"A": 0, "B": 5, "C": 10, "D": 20, "E": 30, "F": 40, "G": 50}
    epc_score = epc_weight[epc_rating]

    void_score = min(avg_void_months * 3, 30)  # Max contribution = 30
    rent_score = rent_uplift_risk * 10         # Max contribution = 10
    demand_score = 10 - min(local_demand_index / 10, 10)  # Inverse logic
    occupancy_score = (1 - occupancy_rate) * 20  # Max contribution = 20

    lease_risk_score = epc_score + void_score + rent_score + demand_score + occupancy_score

    if lease_risk_score > 70:
        action = "Dispose or Retrofit"
    elif lease_risk_score > 40:
        action = "Monitor Closely"
    else:
        action = "Low Risk"

    return lease_risk_score, action
```

This algorithm is not derived from any open-source model and represents internal R&D; developed as part of LCM Analytics' core IP. It is designed to simulate real-world commercial lease risk and recommend interventions, forming a critical component of our market differentiation.