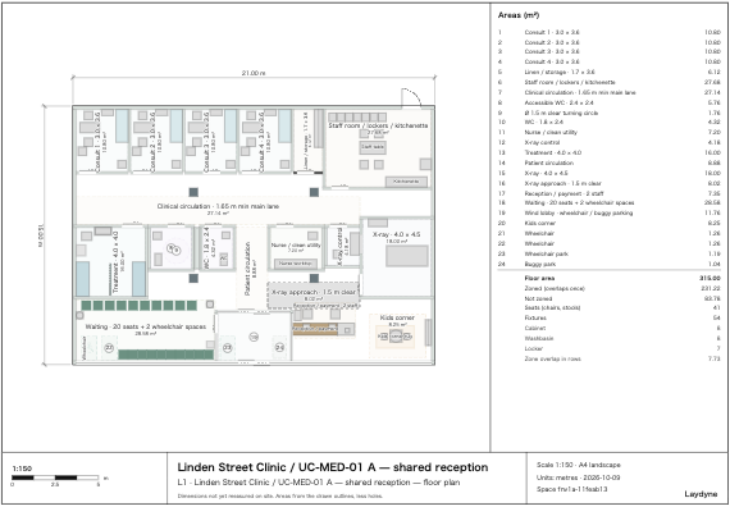


Linden Street Clinic / A / shared reception and payment

B reduces movement by 17.42 m per arrived patient but adds 20.37 s to mean observed patient wait. The total cycle-time difference is not established. Use the result as a trade-off; B is not an overall improvement.

Measure	A	B	B - A / 95% interval
Patient wait / all arrivals	1,902.16 s	1,922.54 s	20.37 s 95% interval: [9.97, 30.77]
Patient distance / 6 h	4,101.45 m	3,345.46 m	-755.99 m 95% interval: [-822.68, -689.30]
Cycle / completed patients	2,854.29 s	2,857.25 s	2.95 s 95% interval: [-7.45, 13.36] · includes 0
Waiting-demand peak	14.30 count	13.75 count	-0.55 count 95% interval: [-0.91, -0.19]

Means over all 20 seeds. Delta intervals are paired Student t 95%; an interval containing 0 does not establish a difference.



A / shared reception and payment. Assumed dimensions. Drawing is a page inset; written dimensions control. See A3 for equipment access points.

Source src-facbccd0-f1d3-4b37-9e10-c511f73c228f · fnv1a-11feab13 · 2026-10-09 · e1c7afaf-93af-4d9c-baea-350c4f28811b/baseline

Drawing inset: use written dimensions; the original sheet scale does not apply.

Peak seat shortage: A mean 0.75 / max 12; B mean 0.55 / max 9. Both 3 of 20 seeds exceed 20 seats. B - A = -0.20 seats; 95% [-0.53, 0.13], so shortage improvement is not established.

Common: 21 × 15 m; four 3.0 × 3.6 m consultation rooms; 20 seats; seven staff (2 doctors, 2 nurses, 1 radiographer, 2 reception/payment). Same 24 / 16 / 10 per-hour arrivals, 20 paired seeds 20261009–20261028, 6 h, warmup 0.

Fictional assumptions. Circular patient routes and static staff reach; no clinical safety, wheelchair turning, shielding, legal compliance or field-accuracy validation. Both options completed all 867 patients; no unfinished or blocked patient.

Evidence appendix 1/3

Document UC-MED-A-decision · revision 3 · source src-facbccd0-f1d3-4b37-9e10-c511f73c228f

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / run.wait.mean / run / run / baseline

Value: 1902.16270762074 s

95% delta interval: not available for this side

Bound: none; reason: none

Comparison: e1c7afaf-93af-4d9c-baea-350c4f28811b

Engine: process-des-2.7.0

Baseline input: fnv1a-aff24d3e

Candidate input: fnv1a-b0c2596c

Baseline space: fnv1a-11feab13

Candidate space: fnv1a-9911c034

Horizon: 21600 s; warmup: 0 s; selection: completion

Seed: 20261009; runs: 20

baseline warnings (0):

none

baseline assumptions (17):

1. Collisions, avoidance, following, passing and re-routing between agents (robots or people): only capacities and FIFO queues are computed.
2. Density-dependent slowing, crowd pressure and the physical length of a queue (waiting agents overlap at one point): pedestrian flow is counts and capacities, not crowd physics.
3. Optimised lift group control (destination dispatch, load weighing beyond a full car, zoning, parking) and lift jerk: lifts with cars follow the fixed collective rules of the process catalog, at constant speed unless the scenario gives an acceleration and seconds per person boarding and alighting; an elevator without cars has only capacity and travel speed, so its waits are close to a lower bound.
4. Door opening times (except the fixed door and dwell time of a lift car at each stop, and its seconds per person boarding and alighting when given), acceleration (except a lift car's, when the scenario gives one), turning and vehicle orientation (circular footprints only), loaded shape, charging, batteries and failures.
5. Evacuation, safety codes and legal compliance, lines of sight and cameras.
6. Human decision-making beyond weighted branches and branches by the state of the run, learning or adaptive behaviour, and time-of-day changes other than arrival rate profiles, scheduled times and shifts set in advance (capacities of resources and zones, and the units of a pool in service, from given times).
7. Cleaning quality (coverage comes from simulate_space).
8. Agreement with real robots or real sites: determinism guarantees reproducibility, not field accuracy; calibrate separately.
9. Two-station transport (simulate_space) and process-scenario transport are separate implementations, kept consistent only by a matching test on one shared case; other layouts can differ.
10. Random values, poisson arrivals, branches and random picks draw from each arrival's and each job's own stream of the seed: the same scenario and seed give the same result, and a job keeps its draws when other jobs or streams change. Times are seconds and distances are metres.
11. goto follows the shortest route on a roadmap for each agent class, with the same circle-versus-obstacle clearance as the robot engine; connections are edges with their length and speed.
12. Capacities on resources, zones and connections are strict FIFO queues without preemption; waiting agents stand at one point, and nothing else slows movement.
13. Zones do not steer routes. An occupy zone counts agents that stop inside it; a transit zone counts every agent inside it, passing or not.
14. A connection end or a place on a blocking part moves to the nearest point the agent fits within 3 m; that offset is not added to the connection length.
15. Finish returns every resource still held by that job. Resources held by unfinished or blocked jobs remain in use.
16. Average wait includes every arrived job and unfinished waits up to the observation endpoint. Cycle averages include completed jobs only.
17. Repeated runs use seeds seed, seed + 1, Jobs, timelines, traces, series and warnings are the first run's; replicates give every measure per run and spread its minimum, mean, maximum and population standard deviation.

candidate warnings (0):

none

Evidence appendix 2/3

Document UC-MED-A-decision · revision 3 · source src-facbccd0-f1d3-4b37-9e10-c511f73c228f

candidate assumptions (17):

1. Collisions, avoidance, following, passing and re-routing between agents (robots or people): only capacities and FIFO queues are computed.
2. Density-dependent slowing, crowd pressure and the physical length of a queue (waiting agents overlap at one point): pedestrian flow is counts and capacities, not crowd physics.
3. Optimised lift group control (destination dispatch, load weighing beyond a full car, zoning, parking) and lift jerk: lifts with cars follow the fixed collective rules of the process catalog, at constant speed unless the scenario gives an acceleration and seconds per person boarding and alighting; an elevator without cars has only capacity and travel speed, so its waits are close to a lower bound.
4. Door opening times (except the fixed door and dwell time of a lift car at each stop, and its seconds per person boarding and alighting when given), acceleration (except a lift car's, when the scenario gives one), turning and vehicle orientation (circular footprints only), loaded shape, charging, batteries and failures.
5. Evacuation, safety codes and legal compliance, lines of sight and cameras.
6. Human decision-making beyond weighted branches and branches by the state of the run, learning or adaptive behaviour, and time-of-day changes other than arrival rate profiles, scheduled times and shifts set in advance (capacities of resources and zones, and the units of a pool in service, from given times).
7. Cleaning quality (coverage comes from simulate_space).
8. Agreement with real robots or real sites: determinism guarantees reproducibility, not field accuracy; calibrate separately.
9. Two-station transport (simulate_space) and process-scenario transport are separate implementations, kept consistent only by a matching test on one shared case; other layouts can differ.
10. Random values, poisson arrivals, branches and random picks draw from each arrival's and each job's own stream of the seed: the same scenario and seed give the same result, and a job keeps its draws when other jobs or streams change. Times are seconds and distances are metres.
11. goto follows the shortest route on a roadmap for each agent class, with the same circle-versus-obstacle clearance as the robot engine; connections are edges with their length and speed.
12. Capacities on resources, zones and connections are strict FIFO queues without preemption; waiting agents stand at one point, and nothing else slows movement.
13. Zones do not steer routes. An occupy zone counts agents that stop inside it; a transit zone counts every agent inside it, passing or not.
14. A connection end or a place on a blocking part moves to the nearest point the agent fits within 3 m; that offset is not added to the connection length.
15. Finish returns every resource still held by that job. Resources held by unfinished or blocked jobs remain in use.
16. Average wait includes every arrived job and unfinished waits up to the observation endpoint. Cycle averages include completed jobs only.
17. Repeated runs use seeds seed, seed + 1, Jobs, timelines, traces, series and warnings are the first run's; replicates give every measure per run and spread its minimum, mean, maximum and population standard deviation.

Different arrivals: none

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / run.wait.mean / run / run / candidate

Value: 1922.536314288935 s

95% delta interval: not available for this side

Bound: none; reason: none

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / run.wait.mean / run / run / delta

Value: 20.373606668194753 s

95% delta interval: [9.972863208741476, 30.77435012764803]; includes 0: false

Bound: none; reason: none

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / run.distance.total / run / run / baseline

Value: 4101.452453229362 m

95% delta interval: not available for this side

Bound: none; reason: none

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / run.distance.total / run / run / candidate

Evidence appendix 3/3

Document UC-MED-A-decision · revision 3 · source src-facbccd0-f1d3-4b37-9e10-c511f73c228f

Value: 3345.4639028562538 m

95% delta interval: not available for this side

Bound: none; reason: none

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / run.distance.total / run / run / delta

Value: -755.9885503731073 m

95% delta interval: [-822.6810164052984, -689.2960843409162]; includes 0: false

Bound: none; reason: none

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / run.cycle.mean / run / run / baseline

Value: 2854.2932563953214 s

95% delta interval: not available for this side

Bound: none; reason: none

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / run.cycle.mean / run / run / candidate

Value: 2857.2482302390945 s

95% delta interval: not available for this side

Bound: none; reason: none

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / run.cycle.mean / run / run / delta

Value: 2.954973843772689 s

95% delta interval: [-7.454524679489832, 13.364472367035209]; includes 0: true

Bound: none; reason: none

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / zone.occupancy.peak / zone / waiting-demand / baseline

Value: 14.3 count

95% delta interval: not available for this side

Bound: none; reason: none

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / zone.occupancy.peak / zone / waiting-demand / candidate

Value: 13.75 count

95% delta interval: not available for this side

Bound: none; reason: none

Metric: e1c7afaf-93af-4d9c-baea-350c4f28811b / zone.occupancy.peak / zone / waiting-demand / delta

Value: -0.55 count

95% delta interval: [-0.9052912317270233, -0.19470876827297678]; includes 0: false

Bound: none; reason: none