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Test dynamic façade BMS integration and alarm reporting guide

Test dynamic façade BMS integration and alarm reporting using an interactive checklist that is commentable and can export as PDF/Excel for controls and evidence.

Project:	
Date:	
Filled by:	

Pre-Test Documentation & Configuration	
1	Confirm the façade integration scope, approved points, and controller readiness.
2	Validate the approved points list against current BMS database; note object types, units, and priorities; acceptance: 100% match; evidence: marked-up list signed by controls lead.
3	Check façade controller firmware and application versions using vendor tool; acceptance: versions match approved submittals; evidence: screenshots and version report.
4	Confirm BACnet device instance IDs, object names, and units are unique and per naming convention; tool: BACnet browser; evidence: CSV export; acceptance: no duplicates, correct SI units.
5	Verify NTP time sync on BMS and façade controllers; tool: NTP query or SNTP status; acceptance: offset ≤ 2 s; evidence: time-sync screenshots.
6	Review safe-state sequences for wind, rain, and fire inputs per approved project specifications and authority requirements; acceptance: documented logic approved; evidence: signed sequence markup.

Network & Protocol Verification	
7	Check physical connectivity (IP or RS-485) and terminations; tool: cable tester and photos; acceptance: continuity OK, polarity correct, shield grounded per design; evidence: photos and tester report.
8	Verify IP reachability: ping façade controller for 200 packets; acceptance: packet loss < 1%, latency stable; evidence: ping summary screenshot.
9	Validate BACnet read/write on representative analog and binary points including priority array; tool: BACnet browser; acceptance: read/write OK, present-value updates within 2 s; evidence: browser screenshots.
10	Confirm MSTP baud, addressing, and token passing (if used); tool: protocol analyzer; acceptance: no retries > 2% over 5 min; evidence: trace capture.
11	Check BBMD/foreign device settings for cross-subnet routing; tool: Wireshark Who-Is/I-Am; acceptance: devices discoverable across subnets; evidence: packet trace.
12	Review cybersecurity controls: unique credentials, role-based access; acceptance: least-privilege enforced; evidence: access matrix and screenshot of roles.

Point-to-Point Functional Tests	
13	Command a sample façade zone to 0%, 25%, 50%, 75%, 100%; acceptance: feedback within ±5% of command within 30 s; evidence: trend plot and photos.
14	Test local/remote handoff: switch local panel to manual; acceptance: BMS shows ‘local’ status and blocks write; evidence: screenshots and photo of panel state.
15	Verify sun sensor scaling: simulate 0–100 klx using calibrator or input override; acceptance: BMS displays within ±2% of set value; evidence: browser screenshot.
16	Validate wind interlock: inject 15 m/s equivalent signal; acceptance: façades move to safe position within 30 s and latch until below threshold for 120 s; evidence: video or trend.
17	Validate rain interlock: wet-contact simulation; acceptance: façades transition to safe within 60 s and auto-clear after dry 120 s; evidence: event log and photo.
18	Fire alarm interface: trigger supervised input; acceptance: façades go to defined state, BMS point read-only, category ‘Life Safety’; evidence: alarm screenshot; note: per approved project specifications and authority requirements.
19	Priority array behavior: apply BMS override at priority 8 then release; acceptance: feedback follows override, returns to schedule within 60 s; evidence: audit log and trend.

Alarm Logic & Notification Tests	
20	Simulate actuator stall: command change with no movement; acceptance: ‘Actuator Stuck’ alarm within 60 s, correct severity and text; evidence: alarm snapshot.
21	Simulate comms loss: disconnect segment for 2 min; acceptance: ‘Communication Fault’ alarm, auto-restore logged; evidence: event list and Wireshark trace.
22	Validate alarm acknowledgment: operator must enter comment; acceptance: ack time-stamped, user recorded; evidence: acknowledgment report export.
23	Escalation test: leave alarm unacknowledged for 10 min; acceptance: email/SMS to supervisor and duty phone received; evidence: message headers/screenshots.
24	Event Enrollment: confirm Off-Normal/To-Normal events, limits, deadbands; acceptance: correct priorities and states; evidence: event configuration export.
25	Nuisance filtering: enable 3 s debounce on binary inputs; acceptance: no alarm chattering during simulated contact bounce; evidence: trend comparison.

Trending, Reporting & Handover	
26	Enable trend logs: position, wind speed, sun level, overrides at 60 s; acceptance: buffer ≥ 7 days; evidence: CSV export and storage path.
27	Verify timestamps: cross-check façade and BMS log entries; acceptance: drift < 2 s; evidence: synchronized event pair screenshots.
28	Compile commissioning report: include pass/fail table, defects log, photos, traces; acceptance: sign-offs from contractor, integrator, and client.
29	Operator training: demonstrate alarm acknowledgment, override release, and safe-state resets; acceptance: attendance sheet with names and roles.
30	Archive backups of controller apps, BMS database, and final point list in CDE; acceptance: retrievable with QR-linked as-built reference.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Test dynamic façade BMS integration and alarm reporting ensures motorized shading and louver controls communicate reliably with the building management system. This checklist focuses on façade automation integration, BACnet point mapping, alarm notification, and event enrollment behavior. It excludes detailed mechanical installation quality or structural façade testing, which should be verified separately. You will confirm command/feedback accuracy, priority arrays, schedules, interlocks from wind, rain, and fire signals, plus alarm texts, severities, acknowledgment, and escalation routes. By following these steps, teams reduce risks such as unsafe louver positions during storms, nuisance alarms, time drift breaking trending, or missed life-safety notifications. Outcomes include traceable evidence, tuned thresholds, consistent time synchronization, and operator-ready dashboards. Use this interactive template to tick items, add comments with photos, and export results to PDF/Excel with a QR for verification.	1. Preparation: Gather approved points list, network analyzer, BACnet browser, vendor tools, NTP access, calibrated sensor simulators, PPE, and permits. Confirm mechanical installation and power are signed off, and ensure stakeholder availability for witnessing and acknowledgments. 2. Using the Interactive Checklist: Start interactive mode, assign zones to team members, tick each item as executed, attach photos, screenshots, and traces, and record measured values, tolerances, and outcomes directly in comments. 3. Export and Distribute: Generate a timestamped PDF/Excel export with embedded photos and attachments, and share with contractor, integrator, and client for daily review, defect tracking, and closeout planning. 4. Sign-Off and Archive: Collect digital signatures from responsible parties, store backups and evidence in the common data environment, and secure authenticity with a QR-linked record for future audits.