CHECKLIST | EXISTING SYSTEM REFURBISHMENT

Modernising step lighting - inspect first, replace only what is necessary

Planning and site survey checklist for theatres, cinemas, auditoriums, event halls and grandstands

What is the objective?

Before refurbishment, identify which parts of the existing installation can remain in use: profiles, cable routes, existing cabling, power supplies, dimmers, DMX/DALI control and, where applicable, emergency power interfaces. Only then should the replacement scope be defined.

01	02	03	04
EXISTING SYSTEM	CABLING	POWER	CONTROL

1 PROJECT BASICS

These details are enough to start. Missing technical information can be completed during the site survey.

BUILDING / PROJECT	LOCATION
CONTACT PERSON	SURVEY DATE
BUILDING TYPE	NUMBER OF HALLS / AREAS
TOTAL NUMBER OF STEPS	REASON / REFURBISHMENT OBJECTIVE

2 INITIAL ASSESSMENT

Not every existing component needs to be replaced automatically.

REUSE	CHECK / ADAPT	REPLACE
Technically suitable and sensible to retain.	Potentially reusable, but capacity, cores or interface must be verified.	Technically unsuitable or not economical to retain.

EXISTING INSTALLATION

Record the existing step lighting

Document mechanics, light effect and construction before defining the replacement system.

3 EXISTING SYSTEM

What is installed and what should the refurbished system achieve?

- ☐ LED step profile / stair-edge profile
- ☐ Light tube / tubelight / light guide
- ☐ LED strip / linear light line
- ☐ Recessed lights / point lights
- ☐ Manufacturer / system known: _____
- ☐ Approx. installation year: _____

MECHANICAL CONDITION

Record step material, existing profile width/height, fixing method, cable exit and visible damage. Check whether the new system can cover existing holes, marks or cut-outs cleanly.

EXISTING LIGHT EFFECT

Step edge only? Additional tread illumination? Indirect light? Separate light zones? Document what the current system does and which functions should remain after refurbishment.

4 DIMENSIONS AND CONDITION

Record each staircase or profile group separately.

Inspection item	Details / result	OK
Number of steps / profiles	_____	☐
Typical profile length	_____	☐
Profile width / height	_____	☐
Step material	_____	☐
Fixing method	screwed / bonded / recessed / unknown	☐
Cable exit	left / right / both sides / unknown	☐
Upper light line installed	yes / no	☐
Lower / tread light line installed	yes / no	☐
Damage / failures	_____	☐

Select the profile after assessing the existing installation

For straightforward step-edge marking, first check whether a slim system such as SL1 is sufficient. If the tread also needs illumination or the existing installation has two light zones, a system such as SL2 is the natural direction. The mechanical installation conditions remain decisive.

FOCUS: EXISTING CABLING

What can the existing cables actually support?

Number of cores, conductor size, cable length and wiring topology determine whether existing cabling can remain in use.

Why this is critical

An existing 24 V installation is not automatically suitable for every new LED configuration. Monochrome systems normally require less current and fewer conductors than RGB or multi-channel systems. Existing cabling should therefore be assessed before the final product configuration is selected.

5 RECORD THE CABLING

Photograph the cable marking whenever possible instead of estimating it.

Inspection item	Existing installation
Cable type / marking	_____
Number of cores	_____
Conductor size / diameter	_____
Number of cables per step	_____
Longest cable run approx.	_____ m
Cable route accessible?	yes / partly / no
Wiring topology	individual feed / groups / daisy-chain / unknown
Distribution point location	_____

6 ELECTRICAL ASSESSMENT

Do not stop at "24 V available".

KEY FACTORS FOR REUSE

Number of cores, permissible current, cable length, voltage drop, existing grouping and the condition of joints and connectors. Long or small conductors may be unsuitable for a higher new load even when the nominal voltage remains unchanged.

ON-SITE MEASUREMENT

Measure power-supply output voltage and the voltage at a remote profile while the system is under load. On RGB systems, use a high-load condition such as white at high output where practical. Record any significant voltage difference.

Existing situation	Mono / Mono	RGB / Mono
Individual feed per step, enough cores	often suitable	check cores + current
Several steps on a small cable	check voltage drop	often critical
Long run / small conductor	usually calculable	particularly critical
Only a few cores available	often possible	may rule it out
Separate DMX bus available	check for reuse	check for reuse

POWER AND CONTROL

Record power supplies, dimmers and building control

Existing equipment can often remain if voltage, capacity and interfaces are compatible with the new LED system.

7 POWER SUPPLIES AND 24 V DISTRIBUTION

Photograph the rating label - output voltage, power and current are essential.

Inspection item	Details / rating label
Existing voltage	12 V DC / 24 V DC / other / unknown
Power supply make / model	_____
Output power	_____ W
Output current	_____ A
Power supplies per area	_____
Location	central / decentral / near staircase
Spare capacity known?	yes / no / unknown

Important

An existing 24 V power supply can only remain in service if sufficient capacity, suitable protection and appropriate distribution are available. If the new connected load increases significantly, the power system must be resized or extended.

8 DIMMING AND CONTROL

Retain the existing operator interface where practical.

- ☐ DMX
- ☐ DALI
- ☐ KNX / building control
- ☐ PWM dimmer
- ☐ fixed brightness / switch
- ☐ one common group per hall
- ☐ multiple groups / individual steps
- ☐ RGB colour scenes currently used

Dimmer / receiver make and model _____

DMX address / DALI assignment / groups

_____

9 EMERGENCY / SAFETY POWER

Record the function - do not infer the safety concept from the wiring alone.

- ☐ Step lighting remains on during mains failure
- ☐ separate emergency power supply available
- ☐ battery / UPS / central battery system installed
- ☐ role within the safety-lighting concept unclear - clarify with the responsible planner

Emergency-operation voltage / supply point

_____

DEFINE THE TARGET SYSTEM

What should the refurbished step lighting do?

The refurbishment should be adapted to the existing installation - not the other way round.

10 REQUIRED LIGHT EFFECT

Define function and appearance first, then size power and cabling.

- ☐ step edge marking only
- ☐ step edge + tread illumination
- ☐ upper and lower light zones dimmed separately
- ☐ monochrome
- ☐ RGB upper light + monochrome lower light
- ☐ existing RGB functionality must be retained
- ☐ colour temperature 2700 K / 3000 K / 4000 K
- ☐ emergency operation required

11 TYPICAL SYSTEM DIRECTIONS

Initial orientation for the technical assessment.

Requirement	First system to assess	Technical focus
simple step-edge marking	SL1	low load, simple cabling
edge + additional tread light	SL2	two light zones, combined or separate
retain RGB functionality	SL2 RGB / project-specific	more cores, higher load, PWM/DMX
recessed / minimal appearance	POM / recessed solution	structure, recess, service access

MONOCHROME IN EXISTING BUILDINGS

If clear step marking is sufficient, monochrome is often the simplest refurbishment route. Lower power demand and fewer conductors increase the chance of retaining existing cabling and parts of the power system.

RGB IN EXISTING BUILDINGS

RGB can preserve existing colour scenes but requires significantly more power and several control conductors. Existing cable capacity, dimmer channels and power-supply capacity must be verified before selection.

12 WHAT SHOULD REMAIN IN USE?

Mark after the site survey.

Component	reuse	check / adapt	replace
Cable routes / containment	☐	☐	☐
Existing 24 V cabling	☐	☐	☐
Power supplies	☐	☐	☐
PWM dimmers / receivers	☐	☐	☐
DMX / DALI / KNX	☐	☐	☐
Control cabinet / distribution	☐	☐	☐
Emergency power interface	☐	☐	☐
Step profiles / luminaires	☐	☐	☐

SITE SURVEY

Photograph, measure, assign

A small number of targeted photos and measurements usually provide the basis for a reliable technical assessment afterwards.

13 PHOTO CHECKLIST

These photos are especially useful for the technical review.

- ☐ overview of one complete staircase / aisle
- ☐ existing step profile from above and from the front
- ☐ opened profile / connection point
- ☐ cable marking clearly readable
- ☐ control cabinet / distribution board overview
- ☐ power-supply rating label
- ☐ dimmer / DMX or DALI receiver rating label
- ☐ terminals and occupied outputs
- ☐ emergency / battery components, if present
- ☐ visible damage or failed sections

14 MEASUREMENT AND FUNCTIONAL CHECK

Check at least one typical area and one remote area.

Check	Result
Power-supply voltage no-load / under load	_____
Voltage at the most remote profile	_____
Profiles per output / group	_____
Upper / lower light-line function	_____
RGB / colour scenes present	_____
Emergency operation tested / condition	_____
Special observations	_____

After the site survey

The recorded data and measurements can be used to define the profile system, connected load, voltage drop, power-supply and dimmer sizing, circuit grouping and the components that can genuinely remain in use. The result is a refurbishment in which only what is technically necessary is replaced.

HAVE YOUR EXISTING SYSTEM ASSESSED

Bissinger Lights assesses existing step lighting, cabling, 24 V power distribution and control, then develops a refurbishment solution that fits the building and the existing infrastructure.

Tel. +49 7261 659 012 0 | info@bissinger-lights.de | bissinger-lights.de

Note: This checklist is intended for technical pre-assessment and project documentation. Final sizing, protective measures, mains connections and safety-related functions must be checked and approved for the specific project by the responsible planners and qualified electrical professionals.