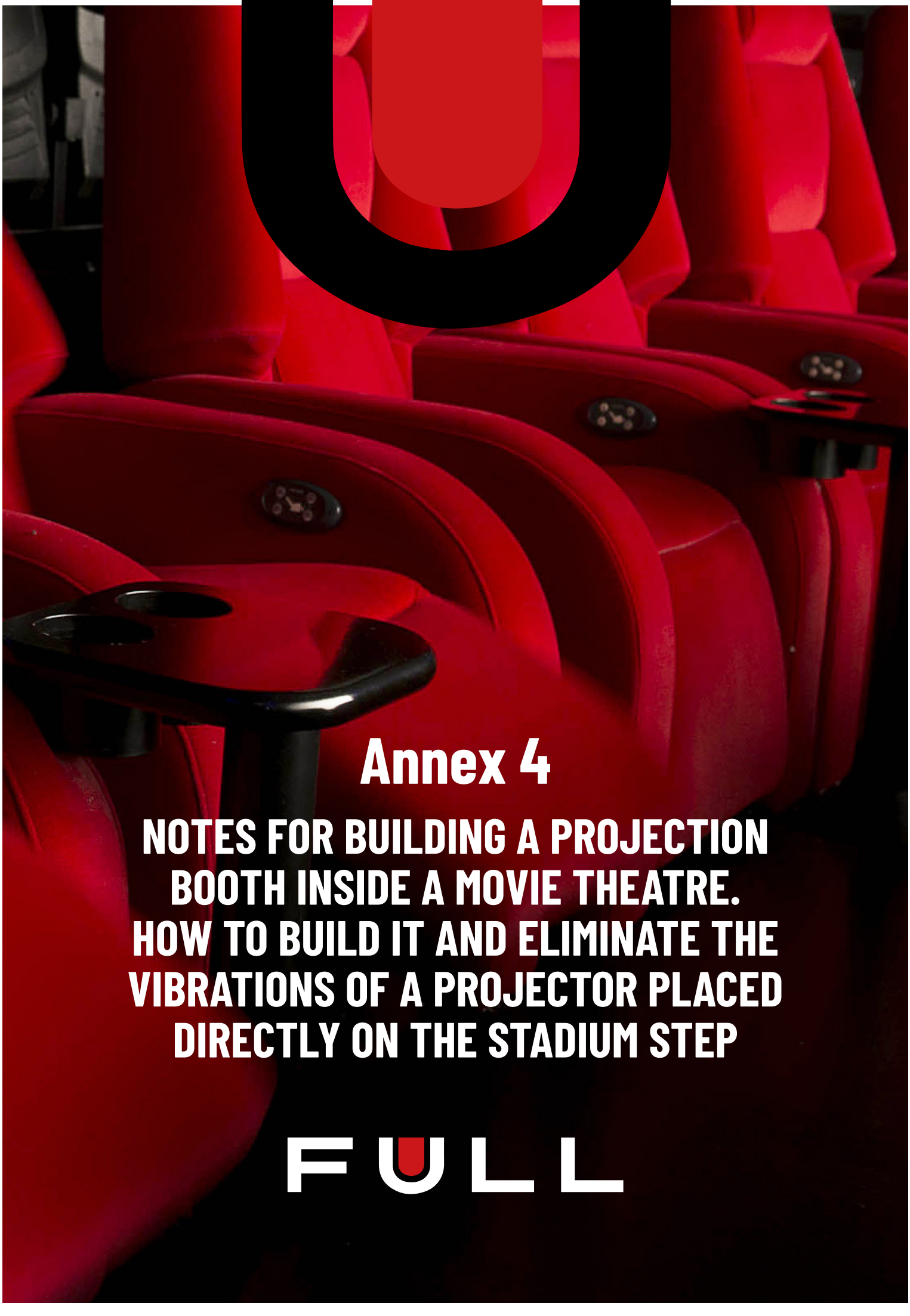

Annex 4

NOTES FOR BUILDING A PROJECTION BOOTH INSIDE A MOVIE THEATRE. HOW TO BUILD IT AND ELIMINATE THE VIBRATIONS OF A PROJECTOR PLACED DIRECTLY ON THE STADIUM STEP

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NOTES FOR BUILDING A PROJECTION BOOTH INSIDE A MOVIE THEATRE. HOW TO BUILD IT AND ELIMINATE THE VIBRATIONS OF A PROJECTOR PLACED DIRECTLY ON THE STADIUM STEP

A projection booth located inside a room, in the middle of the audience, must fulfil a set of very precise requirements, especially when using a high-powered projector.

There are many prefabricated projection booths available that can be hung inside a room, but they tend to be used for very small rooms with low light-output projectors. They usually depend on the room's cooling system to protect its components, but this is a serious acoustic drawback if the noise level emitted is significant. In FC's prototype room, the cooling system of its powerful projector was very noisy, and this was compounded by the decibels of the specially-dedicated air-conditioning system. Let's examine this second specially-dedicated cooling system. It is not possible to use a digital computer-based projector without air-conditioning the space in which it will perform its functions, just like any other computer. While a computer has its own ventilation system, it will not last long if it is enclosed in a booth at high temperatures, so we must always cool the space. Therefore, a projection booth must be easily accessible to facilitate maintenance, air-conditioned, perfectly soundproofed and, finally, sectorized as an independent fire sector.
In this annex, we include the blueprints of the projection booth in our prototype room, room 18. It is neither cheap nor easy to build a projection booth that perfectly meets all these requirements when the screen needs a high light output.

Another added complication arose that concerned us greatly until we were able to resolve it: vibrations. When a projector stands on a step of the stadium seating in a cinema, it is extremely sensitive to vibrations, to the extent that the footsteps of a customer slowly going up the side stairs causes movements noticeable in the projection on the screen due to the vibrations of the projector. To prevent this, we must insulate the projector using low-frequency vibration insulators and a couple of rubber boards of different thicknesses and densities. When we built FC's prototype room, it was a really worrying setback that was eventually resolved by a vibration expert. Let's look at how they solved the problem:

• 6 low-frequency vibration insulators (SERIES *VIB 100 I *BR)

• PURBANCADAS rubber boards of different thicknesses (50 mm and 30 mm), which, under the weight, compressed to a minimum of 20 to 30 mm.

• Please note that the cost of these materials is very affordable, as only a few units and square metres are required. The hard part is knowing how to solve the problem.

We assume that this kind of products is available from all experts in eliminating vibrations. We found them at www.vibcon.es.