SENSING SOUND AND SPACE: AUDITORY AND VISUAL SPATIAL IMPRESSION IN THREE AUDITORIA

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CERTIFICATE

I certify that this thesis has not already been submitted for any degree and is not being submitted as part of candidature for any other degree.

I also certify that the thesis has been written by me and that any help that I have received in preparing this thesis, and all sources used, have been acknowledged in this thesis.

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Signature of Candidate

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In some contexts, the experience of sound and space are often considered as two unrelated experiences. In an auditorium, the senses of hearing and seeing are not necessary unrelated. This thesis proposes that there is a sensorial relationship between sound and space in the context of symphonic concert halls. Through a study of three auditoria, this thesis explores the relationship, and the degree of correspondence and interaction between auditory and visual spatial impression.

It begins by exploring the concepts of auditory and visual spatial impression in relation with auditorium acoustics and architectural design. In auditorium acoustics, a number of terms are used to describe auditory spatial impression, such as "spaciousness," "envelopment," and "intimacy." These terms have connotations beyond the auditory. The thesis suggests that they may also be used to describe visual spatial impression in auditoria.

Through textual analyses, the thesis finds that the auditory and visual terms do not always relate to the same physical characteristics of auditoria and can conflict with one another. Hence, it is apparent that further subjective analyses of auditory and spatial impression are needed.

Three chapters in this thesis are devoted to auditory and visual subjective experiments. Their purpose is to explore the degree of correspondence or contrast, and interaction between auditory and visual spatial impression. The degree of correspondence and contrast between auditory and visual spatial impression appear to vary between auditoria and within auditoria. The relationship between auditory and visual spatial impression appear to be both necessary and arbitrary, and the degree of interaction between them appear to be strong in some cases and weak in other.

From the findings, this thesis suggests that the degree of correspondence or contrast, and interaction between auditory and visual spatial impression could be used to create an audiovisual experience that suit specific musical events. Concert auditoria are culturally and artistically unique spaces. Hence, consideration must be taken to understand the relationships between, and intentions of the acoustical and architectural designs, music and architecture, for a successful and creative collaboration between designers - since the ultimate goal is to create an extraordinary audiovisual experience in a concert hall.