## ACOUSTICS2008/2064 Opera House Reverberation Times - Design Considerations

## Eckhard Kahle<sup>a</sup>, Thomas Wulfrank<sup>a</sup>, Yann Jurkiewicz<sup>a</sup> and Brian Katz<sup>b</sup> <sup>a</sup>Kahle Acoustics, 188 avenue Molière, 1050 Brussels, Belgium <sup>b</sup>LIMSI-CNRS, B.P. 133, 91403 Orsay, France

The intimacy of many historic European Opera Houses, especially of the traditional Italian style, is highly cherished and many of these halls are considered to be among the best halls acoustically. From an acoustical point of view the generally small dimensions - often combined with a moderate seat count - provide excellent source presence and clarity. On the other hand, the corresponding small volume leads to short reverberation times, and in recent decades higher reverberation times have been preferred and asked for by clients and audiences in many countries. Ideas will be presented on how this apparent dilemma between the preference for small dimensions (for intimacy, source presence and definition) and increased volume (in order to create longer reverberation times) can be addressed.