

Enhancement of Acoustical Performance in Universities' Educational Spaces

Hosny Ahmed Dewer ^{1*}

¹ Assistant Professor, Architecture department, Faculty of Engineering, Tanta University, Egypt.

Research Article

Received: 08/03/2020
Accepted: 04/04/2020
Published: 11/04/2020

*For Correspondence

Hosny Ahmed Dewer
Assistant Professor, Architecture
department, Faculty of
Engineering, Tanta University,
Egypt.

Keywords:

English comprehension; English
First Additional Language; work-
integrated learning

E-mail: ha_dewer@yahoo.com

ABSTRACT

the outcome of learning process, from hall 2 acoustic study; there are many acoustics problems in it whereas internal acoustic environment inappropriate for education process and background noise of hall Larger than the limit, has negative effect on acoustic performance in hall, also range of energy consumption in hall in basic case is very high, on assumption the hall is air conditioned, all because of several reasons, most important it, sky light of ceiling, so suggested some acoustic and architecture treatments to solve these problems and achieve acoustic and thermal comfort for hall users [22-24]. These suggested treatments depended on replace the main ceiling with acoustically treated fallen ceiling and wall binding with acoustically treated materials.

INTRODUCTION

Patient health and the reduction of risk of surgical site infections (SSIs) are of paramount importance in the operating room (OR) and a low temperature in the OR limits SSI rates dramatically, slowing the growth of bacteria and other microorganisms. Technical standards on heating, ventilation, and air conditioning have been established to control OR air quality and thereby reduce risk to patients. Numerous organizations have contributed guidance to these standards, including the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), the American Society for Healthcare Engineering (ASHE), the Association for the Advancement of Medical Instrumentation, the Association for Professionals in Infection Control and Epidemiology, and the Association of perioperative Registered Nurses (AORN) [1]. In 2019, the Joint Commission noted that 68-75°F (20-24°C) is appropriate for the OR depending on the OR class [2]. To ensure observance the Joint Commission monitors institutions with regular unannounced surveys of their operating rooms [3]. Though this temperature guideline is higher than the ANSI/ ASHRAE/ASHE Standard 170-2017 design guidance that OR should be kept at between 66-68° F (19-20° C) and 30-60% humidity [4].

And while taking every precaution to ensure that SSI risk is as low as possible in the OR and that the scrubbed-in surgical staff is comfortable, it has been observed that the low temperature has a negative effect on the performance, comfort and well-being of surgical staff working peripherally, including perioperative nurses, anesthesia providers, and perfusionists [5-8]. To address this issue, several devices have been invented or repurposed to serve the thermal comfort needs of the OR staff. Two such popular devices are the off-label use of the 3MTM Bair Hugger™ Patient Normo-thermia System and OPERATIONHEATJAC® products.

The Bair Hugger is intended to be used to keep a patient's core body temperature within the normo-thermic temperature zone while they are on the operating table [9]. However, it is often used by surgical staff for personal warmth wherein the hose attached to the Bair Hugger is diverted from the disposable Bair Hugger blankets and into the personal garments or blankets of the OR staff. This method is not AORN compliant as it introduces contaminated air flow into the OR.