

SYMPOSIUM ON COMMERCIAL SPACEFLIGHT SAFETY ISSUES (D6)
Commercial Space Flight Safety and Emerging Issues (1)

Author: Mr. Charles Lauer
Rocketplane Global, Inc., United States, clauer@rocketplane.com

Ms. Misuzu Onuki
Space Frontier Foundation, Japan, mszmail@aol.com

DEVELOPMENT OF A LAND USE, PLANNING AND ARCHITECTURAL VOCABULARY FOR
COMMERCIAL SPACEPORT PROJECTS**Abstract**

The transition from government driven to commercially driven spaceport development is just beginning. During the last 50 years of the human spaceflight era the predominant driver has been government programs – first as an artifact of the Cold War and later as an element of National Pride. In this mode, the selection of spaceport locations and the architectural environment created at these locations has been almost completely utilitarian and void of any elements of style or architectural expression. Now that commercial market forces are beginning to enter the arena of human spaceflight (both suborbital and orbital) the drivers that influence the planning, architectural and aesthetic expression of the built environment are dramatically changing. The first driver being changed is at the planning level – the decision matrix influencing WHERE commercial spaceports should be developed. The default government planning driver has been to locate spaceports far away from urban areas on vast tracts of land with essentially no population or existing built environment. White Sands Missile Range, developed at the start of the Cold War era, is the epitome of this “away from everywhere” planning mentality. Edwards AFB / Mojave and to a lesser extent Cape Canaveral / Kennedy Space Center were also largely undeveloped areas at the time of the original location selections, although the post-war urban sprawl has encroached in Florida and California.

New commercial spaceports in contrast are being developed in and near major metropolitan areas in both the US and abroad, taking advantage of billions in existing infrastructure and tourism development as well as tapping the market power of existing global tourist destinations. The physical, architectural and stylistic expression of these new commercial spaceport projects will be completely different from the first generation of government developed spaceports because the fundamental market drivers are totally different. Flight safety issues will also be dealt with in a different manner.

This paper will examine safety, planning, design and aesthetic trends in new spaceport projects in the US, Europe and Asia and how the functional aspects of working commercial spaceports are interwoven with mass market tourism and visitor center projects which are co-located at these developments. New elements of aesthetic expression will be compared to previous fantasy-based space theme tourism developments as well as current operations such as the KSC Visitor’s Center to highlight the principal design drivers and aesthetics of the next generation of commercial spaceport projects.