

SOCIETY OF AMERICAN MILITARY ENGINEERS
DESIGN EXCELLENCE AWARD - 2002



ANTENNA SYSTEM CONVERSION

CAPE GRECO, CYPRUS

INTERNATIONAL BROADCAST BUREAU VOICE OF AMERICA / RADIO SAWA



duTREIL, LUNDIN & RACKLEY/ HATFIELD & DAWSON

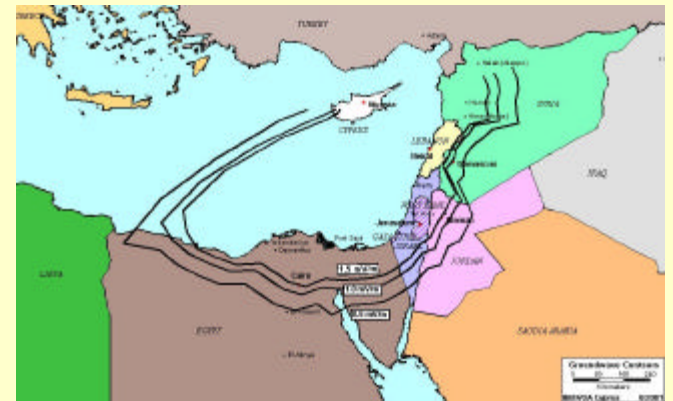
STRONG PARTNERING ACHIEVED AMBITIOUS PROJECT OBJECTIVES



Strengthening our *strategic presence* in Middle East by the anniversary of September 11th.



Meeting the challenges of an *accelerated deadline* to improve US government broadcasting capabilities to the Arabic-speaking world with the construction of a high power medium wave transmitting facility on Cyprus to be operational by the first anniversary of the September 11th attack on the United States.



PROJECT TEAM



OWNER

INTERNATIONAL BROADCAST BUREAU (IBB)
VOICE OF AMERICA - RADIO **SAWA**

ENGINEERING - SITE SELECTION –
ANTENNA DESIGN & IMPLEMENTATION

dTR / HATFIELD & DAWSON JOINT VENTURE

EQUIPMENT SUPPLIER

KINTRONICS LABORATORIES

SITE OWNER

RADIO FRANCE

LOCAL CONTRACTOR

FRIXOS & CO.

TRANSMITTER

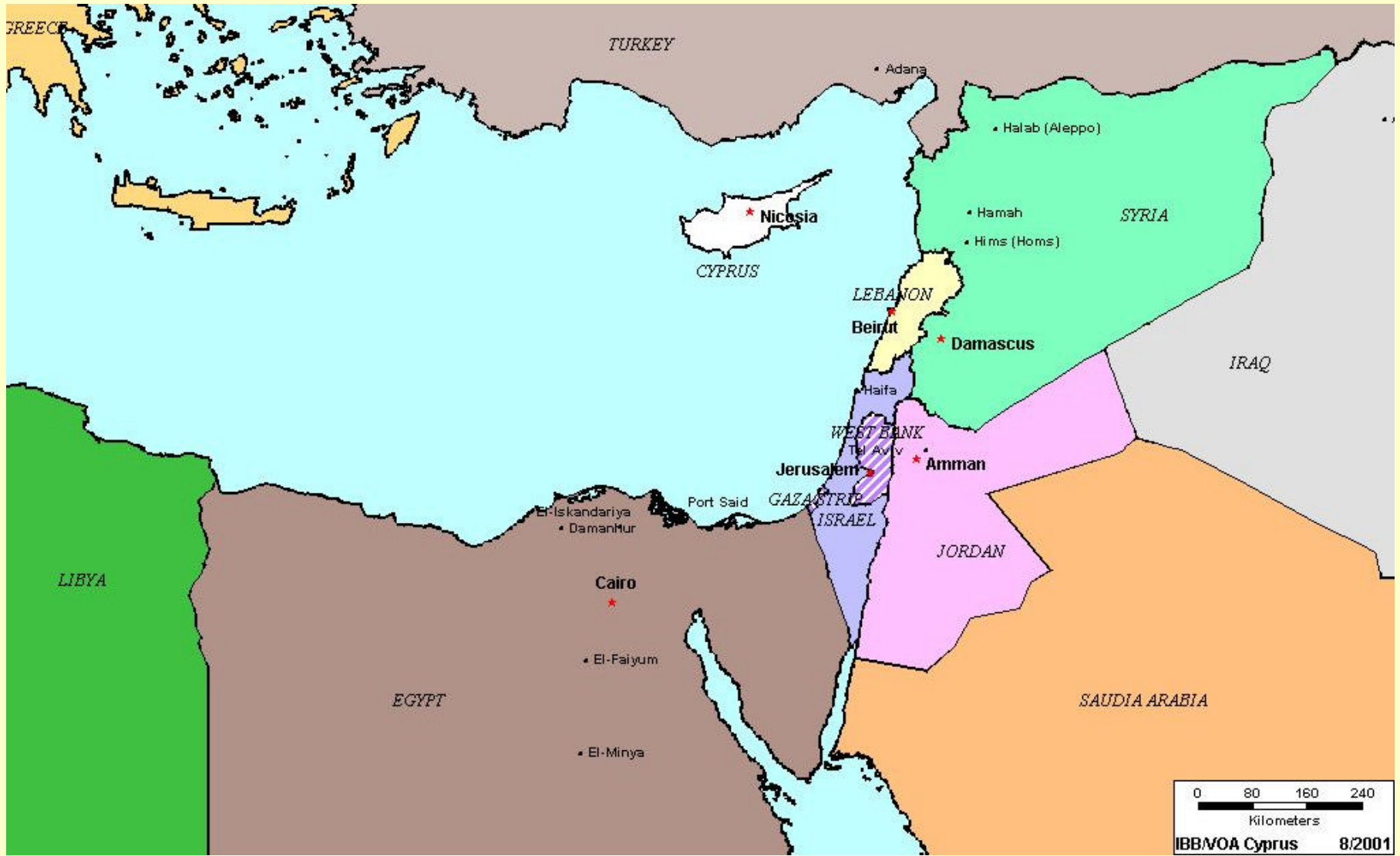
THALES

STRUCTURAL REHABILITATION

JA PARIS SA

COORDINATION

GOVERNMENTS OF CYPRUS AND GREAT BRITAIN

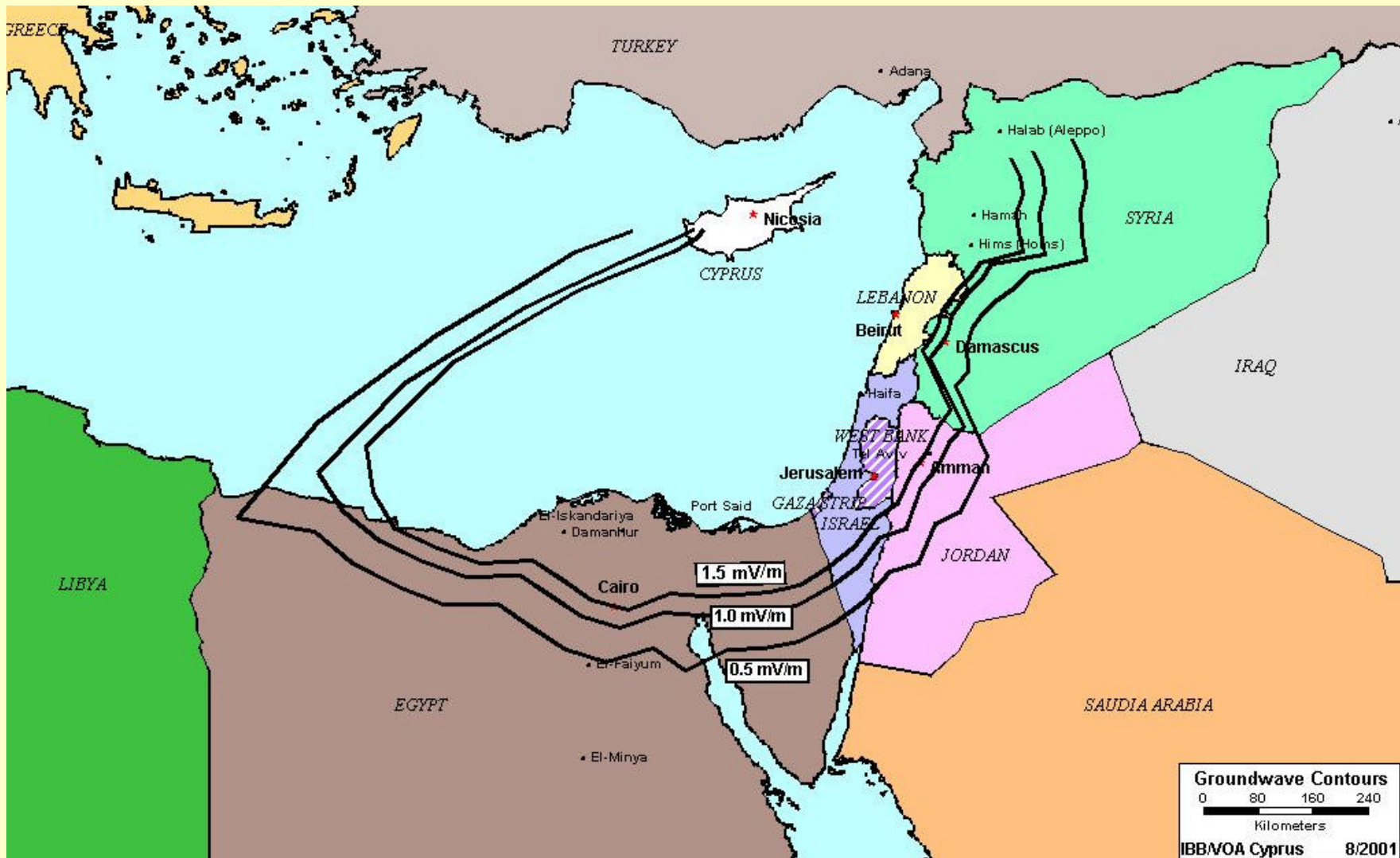


EASTERN MEDITERRANEAN



CYPRUS

CAPE CRECO and GREEK / TURKISH BORDER LINE



EASTERN MEDITERRANEAN RADIO **S**A**W**A COVERAGE of the MIDDLE EAST

KEY PROJECT FEATURES

INNOVATIVE REUSE OF EXISTING REDUNDANT ANTENNA

TIME AND COST SAVINGS

INNOVATIVE SOLUTIONS TO COMPLEX DESIGN PROBLEMS

CRITICAL TIMETABLE MET

ENVIRONMENTAL DISTURBANCE MINIMIZED



THE DESIGN-BUILD APPROACH DELIVERED



FLEXIBILITY

HIGHER QUALITY

LOWER COST

“The process offered the flexibility needed and resulted in the desired high quality of performance along with lower project costs. The work was performed to the great satisfaction of all parties and completed ahead of projected schedule.”

Vince Nowicki, IBB Chief, Broadcast Technical Division

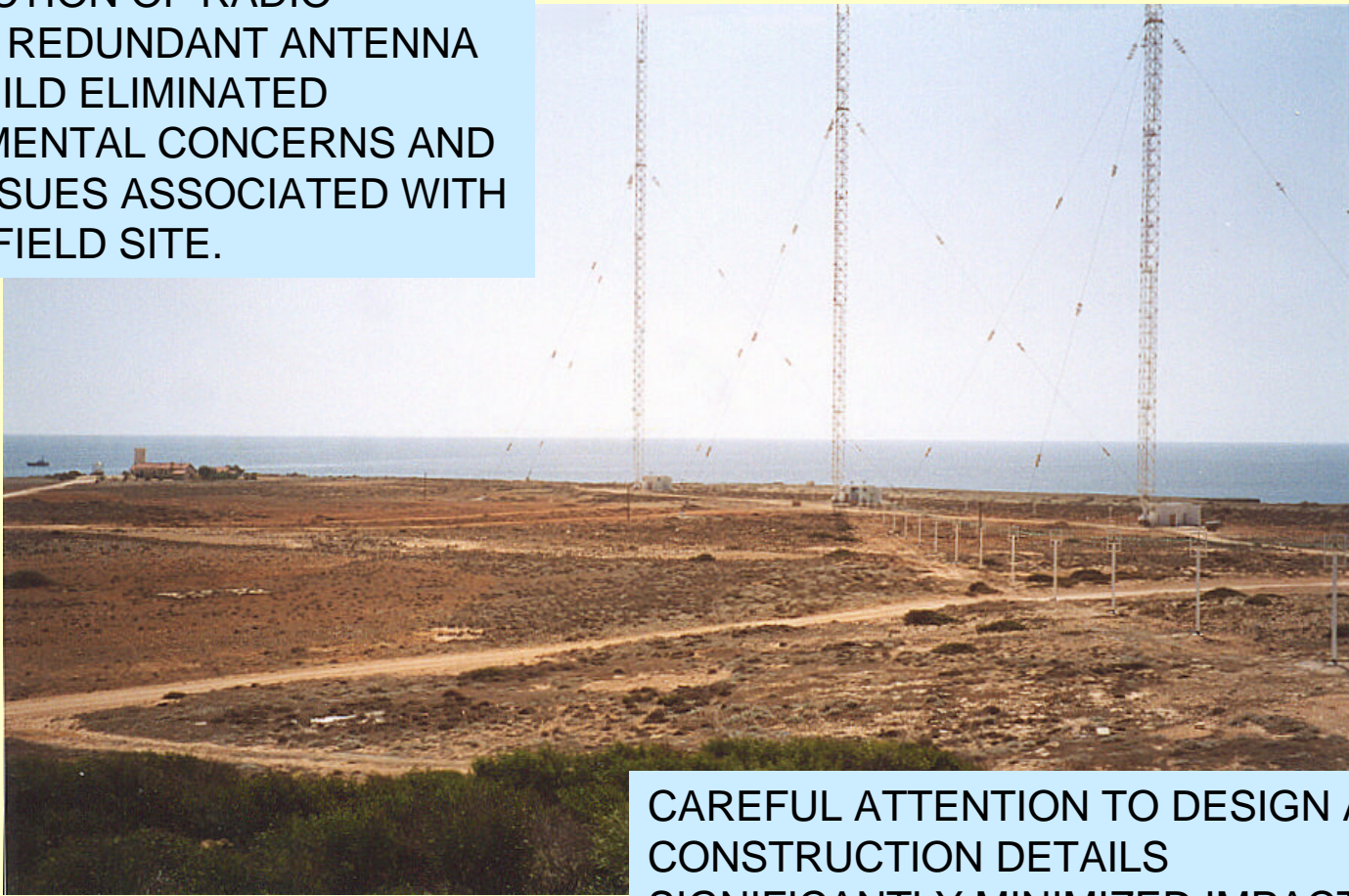
IBB CLEARLY DEFINED THE MISSION



FREQUENT AND EFFECTIVE COMMUNICATION BETWEEN IBB AND PROJECT TEAM FACILITATED CONTINUOUS ADJUSTMENTS TO SCHEDULE AND TEAM INTEGRATION

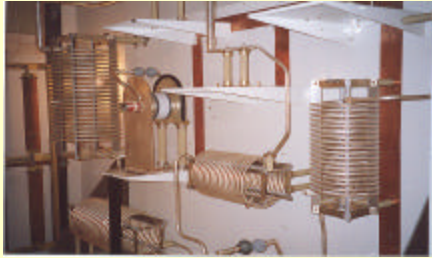
ENVIRONMENTAL ISSUES and PERMIT REQUIREMENTS WERE KEY FACTORS IN SITE SELECTION

THE SELECTION OF RADIO FRANCE'S REDUNDANT ANTENNA FOR REBUILD ELIMINATED ENVIRONMENTAL CONCERNS AND PERMIT ISSUES ASSOCIATED WITH A GREEN-FIELD SITE.



CAREFUL ATTENTION TO DESIGN AND CONSTRUCTION DETAILS SIGNIFICANTLY MINIMIZED IMPACTS ON THE SITE – A NATIONAL PARK.

TIGHTLY INTEGRATED INTERNATIONAL TEAM DELIVERED DESIGN/BUILD PROJECT AHEAD OF AN AMBITIOUS SCHEDULE



NORMAL PROJECT OF THIS TYPE

18 – 24 MONTHS

TOTAL PROJECT FROM INITIAL SURVEY TO COMPLETION

14 MONTHS



ANTENNA COMPONENT FROM NOTICE TO PROCEED TO COMPLETION

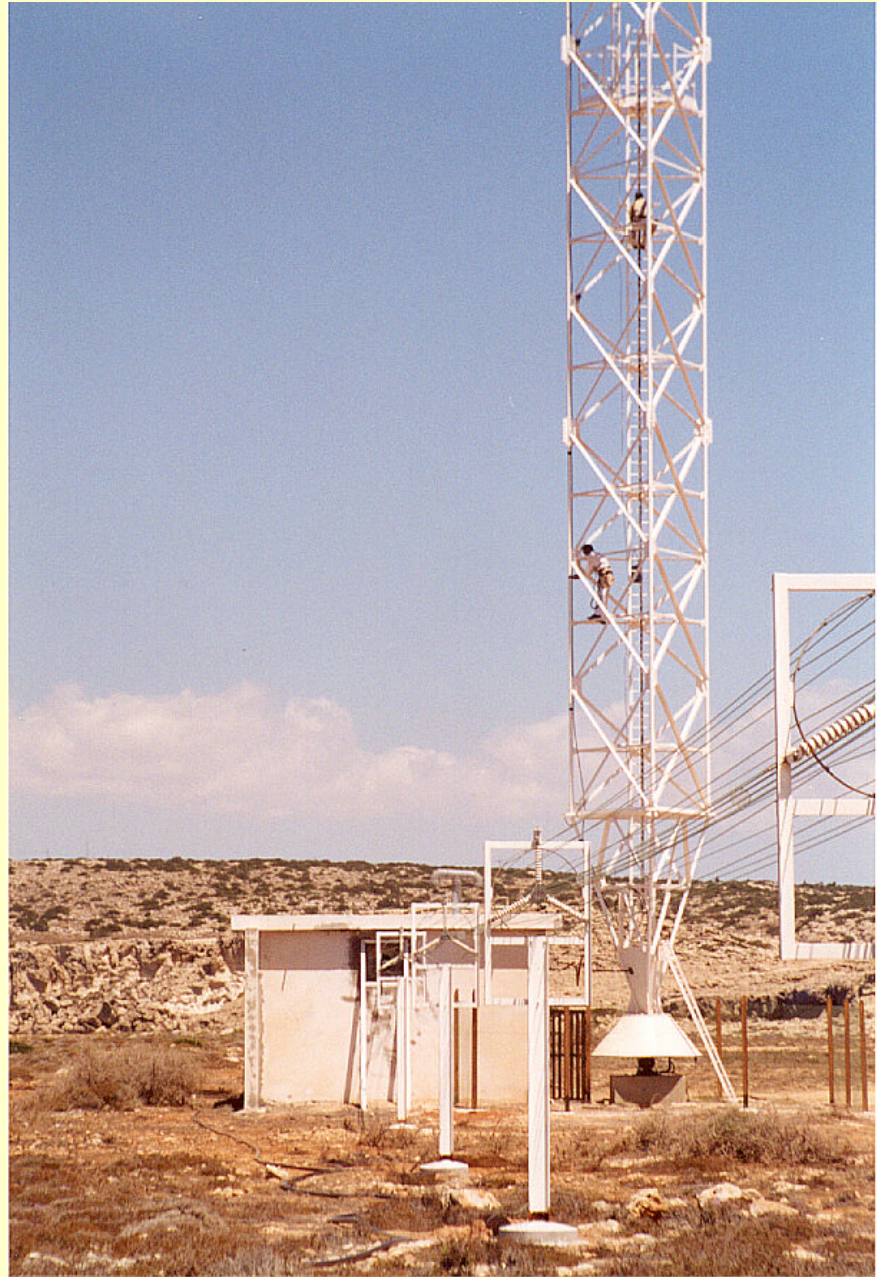
9 MONTHS

IBB ASSUMED INTEGRATION RISK AS THE GENERAL CONTRACTOR



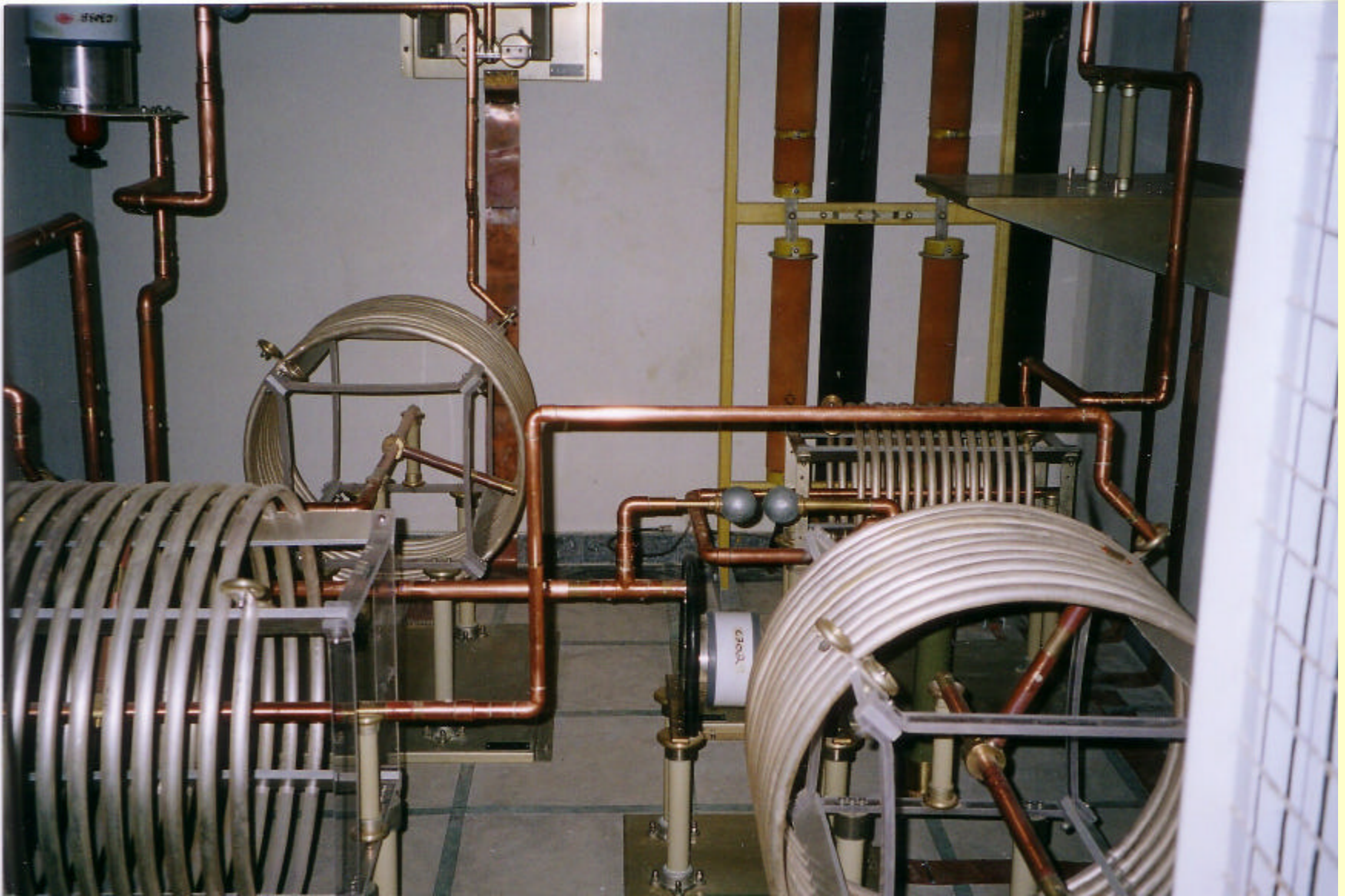
WELL INTEGRATED FIELD TEAM DELIVERED THE FLEXIBILITY TO IMPLEMENT DESIGN CHANGES IN THE FIELD

TOWER and
ANTENNA
TUNING
EQUIPMENT
BUILDING





**TRANSMISSION
LINE DETAILS**

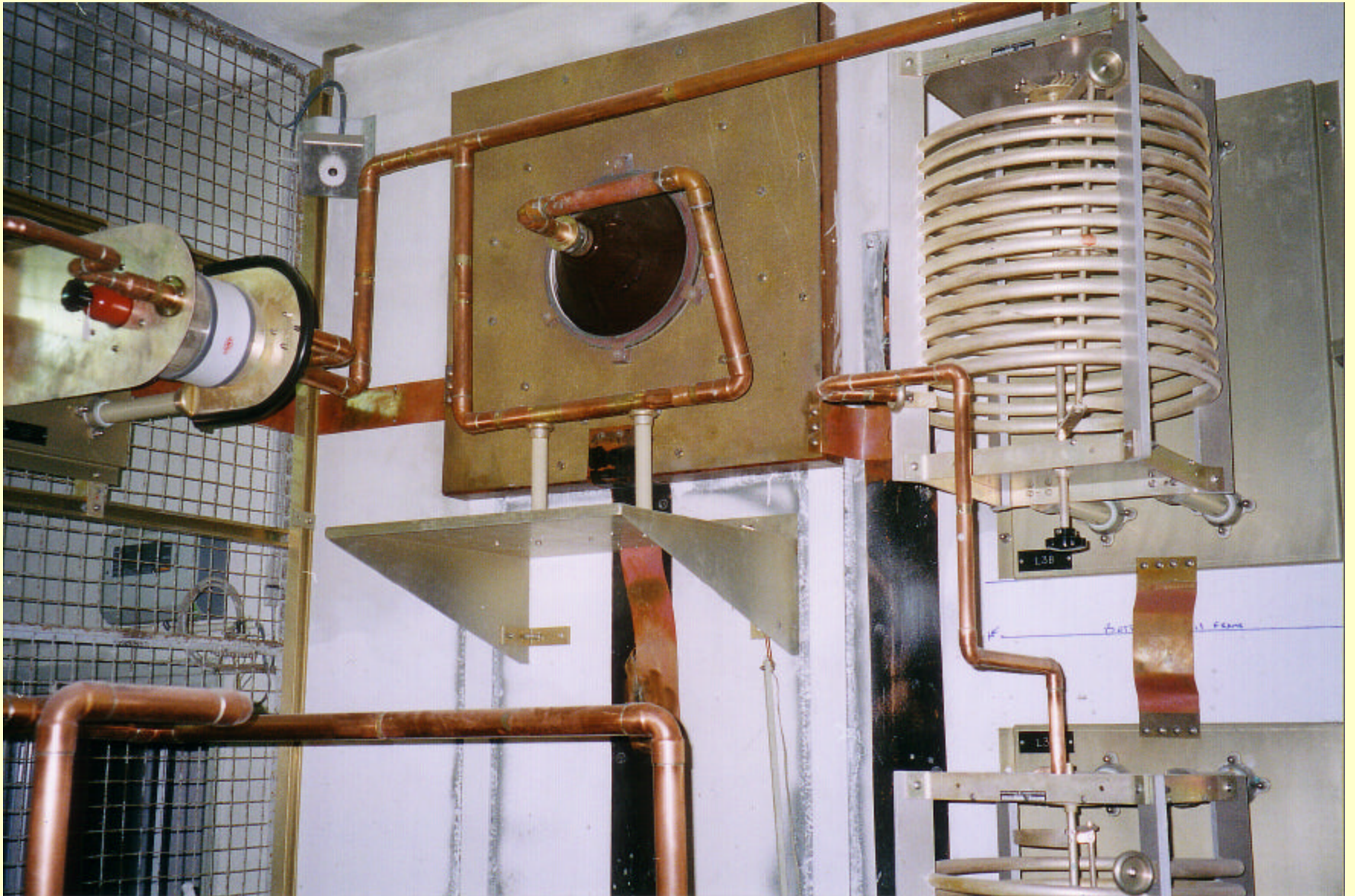


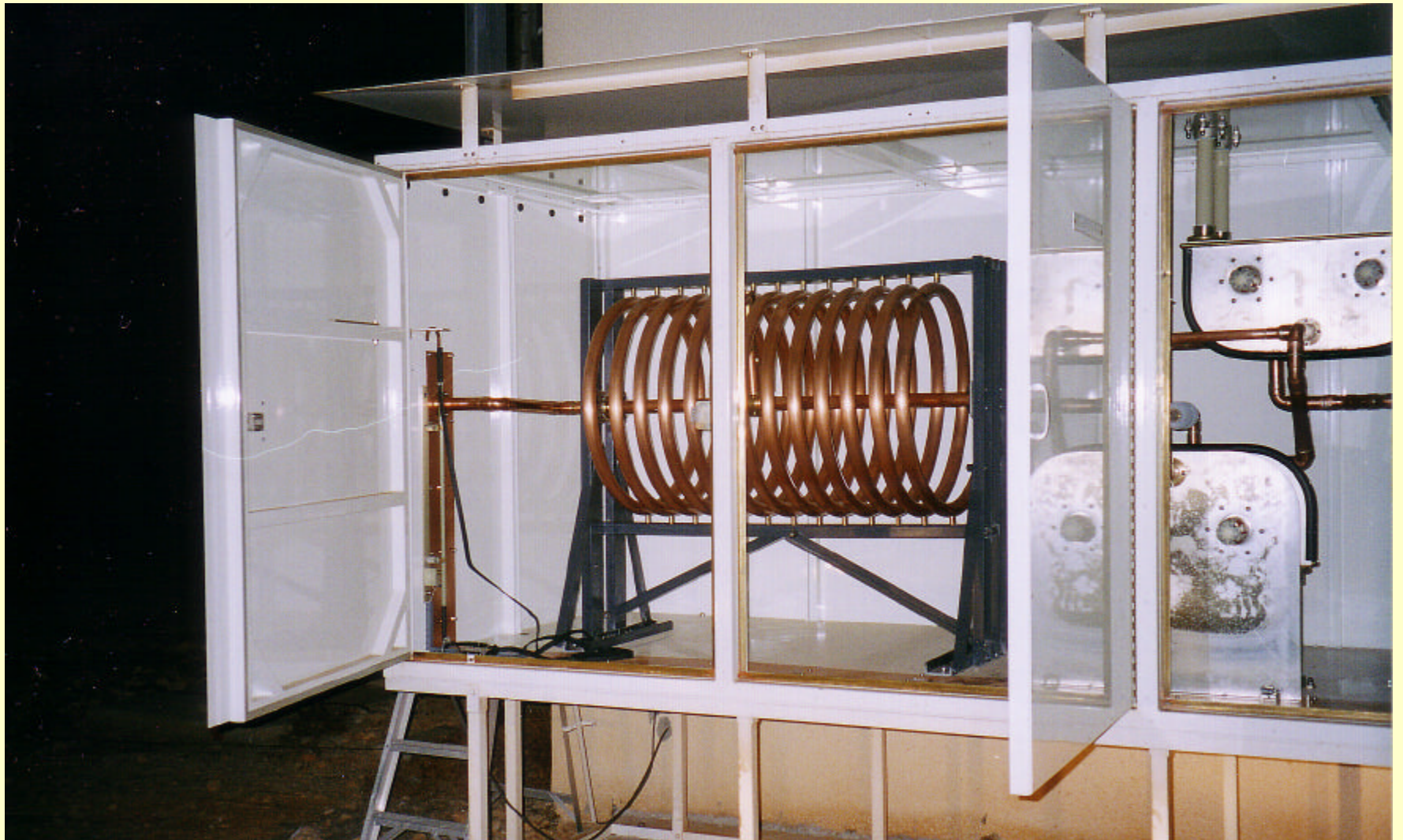
**HIGH CURRENT INDUCTORS IN COMPLETED ANTENNA
FEED SYSTEM TOWER #3**



IMPEDANCE MEASUREMENT SETUP

FEED SYSTEM COMPONENT





HIGH VOLTAGE – LOW LOSS FILTER



WORK UNDERWAY AT ANTENNA EQUIPMENT BUILDING

VALUES AND ACCOMPLISHMENTS

INNOVATIVE REUSE OF EXISTING REDUNDANT ANTENNA

TIME AND COST SAVINGS

INNOVATIVE SOLUTIONS TO COMPLEX DESIGN PROBLEMS

CRITICAL TIMETABLE MET

ENVIRONMENTAL DISTURBANCE MINIMIZED

