



THE PORT AUTHORITY OF NY & NJ

Engineering Department

MINUTES OF MEETING

Date of Meeting: August 23, 2006
Location: NYC Department of Buildings, 280 Broadway, New York
Attendees: See Attached Attendance Sheet
Subject: World Trade Center Transportation HUB

Purpose:

Discuss with the Department of Buildings (DOB) the Means of Egress and Code compliance plans, updated based on discussion at the previous meeting in October of 2005.

Discussion:

The Downtown Design Partnership (DDP), the architects and engineers of record for the project, gave a power point presentation to provide an overview of the project in support of a proposal to deal with three Building Code of the City of New York (BCCNY) requirements by meeting the intent, rather than the letter of the Code, as follows:

1.
 - a) PATH Platform Level and Mezzanine Level space (within the Fare Zone) are being designed in accordance with NFPA 130. The adjoining areas comprising of Mall and Transit Hall (non-transit occupancies) are being designed in accordance with the BCCNY. Per NFPA 130, fire separation of three hours is required between transit (PATH) and non-transit occupancies. NFPA 130 also permits the fire separation to be modified based on an engineering analysis of potential fire exposure hazard. In the current design, the three-hour fire separation is proposed to be achieved through mechanical ventilation and smoke management system. The Mezzanine and West Street Concourses typically have high vaulted, sprinklered ceilings, creating a natural smoke reservoir between the two spaces. DDP explained that with proper smoke control by means of air exhaust and supply, a zone of tenable environment, no less than eight feet in height, would be achieved in the Mezzanine and West Street concourse, which will be demonstrated by Computational Fluid Dynamics (CFD) analysis. It was also pointed out that the fire model for a train fire shows the fire load to last approximately 15 minutes before dissipating.
 - b) DOB feels that there is no standard method or test to establish the three-hour equivalency with the smoke-management system alone and suggested to provide draft curtain and closely spaced sprinklers (water curtain) between PATH Mezzanine level and West Street and Transit Hall concourse.

Gateway 3
100 Mulberry Street
Newark, NJ 07102



THE PORT AUTHORITY OF NY & NJ

MINUTES OF MEETING (cont'd)

August 23, 2006

2. In the current design, DDP has calculated the occupant loads for the retail areas and public spaces based on the International Building Code (IBC) procedure for malls, which is more realistic than BCCNY. DOB stated that since IBC is still not in use in NYC, the occupant load should be calculated based on the current BCCNY and compared with the IBC number. DOB remarked that although BCCNY uses a 50 sq. ft. per person occupant load factor for retail, that the 50 sq. ft. per person number is somewhat misleading since that is for sales areas that are not at the first floor or basement. This ratio may not be realistic for the below grade mall, particularly based on the loads seen at the original WTC site.
3.
 - a) DDP has calculated the total occupant load of 10,480 in the mall and transit hall, including retail spaces and pedestrian flow through transit hall, concourses and mezzanine. The exit capacity for the total occupant load is provided by 27 enclosed exit stairs and open stairs. The open stairs constitute approximately 25% of total required exit capacity in the 'east bathtub' area of the project. DOB mentioned that net floor area should be used in the calculation of occupant load.
 - b) Open stairs/escalators are not permitted as exits in the BCCNY. DOB stated it might be acceptable to provide only 10 to 15% of total required exit capacity with open stairs, but not 25%. DOB suggested to protect the open stairs with draft curtain and sprinklers. DOB also suggested that DDP should explore the possibility of introducing safe areas and horizontal exits instead of open stairs. DDP should also look at the required exit capacity for the occupant load based on NYC Building Code.

Next Steps:

1. DDP will revisit the design based on suggestions made by DOB.
2. DDP will continue with CFD modeling analysis based on actual testing of material assemblies.
3. DDP will look at safety issues concerning the use of deluge sprinkler/water curtains based on experiences at other facilities and make a recommendation.



THE PORT AUTHORITY OF NY & NJ

Engineering Department

MINUTES OF MEETING (con't)

August 23, 2006

4. After the design is revised, it will be again presented to DOB for concurrence.
5. Either a separate presentation to FDNY should be made through PA Operations Services Department or PA may request DOB to invite FDNY at the next DOB presentation.

Saroj Bhol, P.E.
Manager, Design Standards
Quality Assurance Division
The Port Authority of NY & NJ

cc: All attendees

Concur.

8/30/06

RECORD OF ATTENDANCE AT MEETINGS
280 BROADWAY, 7TH FLOOR
NEW YORK, NY 10007

DATE:

SUBJECT:

NAME	TITLE	REPRESENTING	PHONE #	FAX #	E-MAIL
Walter Paumier	Executive Director	PA	973-792-3985	2907	WPaumier@paumier.org
Harold Vardi	Senior Architect	PA	973-792-3939	973-792-3908	hvardi@paumier.org
Michael Rosenzweig	Regional Manager	PA	973-792-3939	973-792-3908	Mik_Rosenzweig@paumier.org
LOUIS MENNO	PROGRAM DIRECTOR	PA	212-435-5530	212-435-5644	LMENNO@PAUMIER.ORG
Tim Grassi	Project Manager	PA	212-435-5423	212-435-5644	TGrassi@PAUMIER.ORG
STANLEY LERMAN	PROGRAM MANAGER	PA	212-435-5655	212-435-5644	Stanley@paumier.org
SARAJ BHOE	Manager, Design/Build	PA	973-792-3930	973-792-3908	Sbho@paumier.org
Fachra Amer	Deputy Comm	DOB	212-504-3248		fachra@paumier.org
Joe Hurd	Architect P	DDP	917-522-2865		joe.hurd@paumier.org
Graham Clarke	PE	DOP	917-522-2879		graham.clarke@paumier.org