

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK

In the Matter of

DEVELOP DON'T DESTROY (BROOKLYN), Inc.; COUNCIL OF BROOKLYN NEIGHBORHOODS, INC.; ATLANTIC AVENUE BETTERMENT ASSOCIATION, INC.; BERGEN STREET BLOCK ASSOCIATION, INC.; BOERUM HILL ASSOCIATION, INC.; BROOKLYN BEARS COMMUNITY GARDENS, INC.; BROOKLYN VISION FOUNDATION, INC.; CARLTON AVENUE ASSOCIATION, INC.; CARROLL STREET BLOCK ASSOCIATION BETWEEN FIFTH AND SIXTH AVENUES, INC.; CENTRAL BROOKLYN INDEPENDENT DEMOCRATS by its President Josh Skaller; CROWN HEIGHTS NORTH ASSOCIATION, INC.; DEAN STREET BLOCK ASSOCIATION, INC.; EAST PACIFIC BLOCK ASSOCIATION, INC.; FORT GREENE ASSOCIATION, INC.; FORT GREENE PARK CONSERVANCY, INC.; FRIENDS AND RESIDENTS OF GREATER GOWANUS by its President MARILYN OLIVA; NEW YORK PUBLIC INTEREST RESEARCH GROUP, INC. ("NYPIRG"); PARK PLACE-UNDERHILL AVENUE BLOCK ASSOCIATION by its President LINNEA CAPPS; PARK SLOPE NEIGHBORS, INC.; PROSPECT HEIGHTS ACTION COALITION by its President PATRICIA HAGAN; PROSPECT PLACE OF BROOKLYN BLOCK ASSOCIATION, INC.; SIERRA CLUB, INC.; SOCIETY FOR CLINTON HILL, INC.; SOUTH OXFORD STREET BLOCK ASSOCIATION by its President ABBOT WEISSMAN; SOUTH PORTLAND BLOCK ASSOCIATION, INC.; and ZEN ENVIRONMENTAL STUDIES INSTITUTE, LTD.

AFFIDAVIT OF
NORMAN GRONER

Petitioners – Plaintiffs,

For a Judgment Pursuant to Article 78 of the CPLR and
Declaratory Judgment

- against -

URBAN DEVELOPMENT CORPORATION d/b/a
EMPIRE STATE DEVELOPMENT CORPORATION;
FOREST CITY RATNER COMPANIES, LLC;
METROPOLITAN TRANSPORTATION AUTHORITY; and
NEW YORK STATE PUBLIC AUTHORITIES CONTROL BOARD

Respondents – Defendants.

7. I submit this affidavit as an expert in support of the Article 78 submitted by petitioners challenging the Environmental Impact Statement ("EIS") created by respondents in connection with the proposed Atlantic Yards development ("the Project").

8. Based upon my extensive experience in the area of fire safety and emergency planning, I am considered an expert in the field of risk analysis related to building safety and security.

9. It is my understanding that the EIS contains no risk analysis of issues related to terrorism security.

10. Based upon my expert opinion, risk and vulnerability analyses of issues related to terrorism security should be conducted as part the EIS because a terrorist attack at the Project site is a Reasonable Worst Case Scenario.

11. I understand that the Project will be the location of a major urban professional sports arena hosting National Basketball Association events, as well as concerts, circus performances and other large public attendance attractions. The arena will seat 20,000 people. In addition, the Project will sit upon what is already one of New York City's major transportation centers. The Atlantic Yards terminal transportation complex (the "Atlantic Terminal") currently services 10 subway lines (Atlantic Avenue and Pacific Street Stations) and the Long Island Railroad. Currently, an average of over 27,000 riders utilize the Atlantic Yards Terminal subway system on a daily basis. That number is projected to increase by possibly more than 18,000 daily users plus evening arena users more than 240 nights per year if the Project is built. The Project will also have at least four large-scale residential glass and steel skyscrapers abutting public streets

in direct proximity to the arena. These towers will range to a height of 53 stories. Further, the Project sits at one of the busiest traffic intersections in New York City – Flatbush and Atlantic Avenues.

12. Due to all of these factors – the professional sports stadium, the Atlantic Terminal transportation hub, the glass/steel skyscrapers, and the major traffic intersection, it is my expert and professional opinion that the risk of and design vulnerability to a terrorist attack is a Reasonable Worst Case Scenario that should have been studied as part of the EIS. The EIS omitting this analysis is particularly egregious given that the Atlantic Terminal was already the subject of a planning for a terrorist attack in 1997.

13. The EIS is deficient in its failure to perform any threat and vulnerability assessments related to a possible terrorist attack. It is also deficient in its failure to consider alternative locations and configurations and mitigation strategies for the arena, residential towers or critical infrastructure including the Atlantic Terminal transportation hub.

14. Given that the risk of a terrorist attack is a Reasonable Worst Case Scenario, the EIS should have considered alternative configurations to limit the vulnerability of the arena as well as alternative locations in Brooklyn, which may have reduced the degree of risk. The EIS should also have analyzed threats posed by forced entry, covert entry, ballistics, explosions, and chemical, biological and radiological weapons.

15. Due to the large amount of steel and glass contemplated in the construction of the arena and towers, the EIS should also include blast analysis that

includes different scenarios for blast resistant window treatments.

16. In addition, due to the high concentrations of people associated with the density of residential and commercial buildings, public transportation facilities and the sports arena, the EIS should analyze the performance of roadways sufficient to (a) provide adequate ingress and egress of emergency response vehicles, and (b) to ensure that the development does not exacerbate any regional evacuation necessitated by a terrorist attack or natural disaster.

17. The EIS should have also analyzed the Project utilizing guidance from the following resource materials:

- a. U.S. Department of Defense: Minimum Antiterrorism Standards for Buildings (July 2002)
- b. U.S. Government Services: Administration Facilities Standards for Public Buildings, Chapter 8, Security Design (2005)
- c. Interagency Security Committee: Design Criteria for New Federal Office Buildings and Major Modernization Projects (May 2001 and NRC Review Committee Recommendations)
- d. Center for Disease Control/National Institute of Occupational Safety and Health: Guidance for Protecting Environments from Airborne Chemical, Biological and Radiological Attacks (April, 2003)
- e. U.S. Army Corps of Engineers: Protecting Buildings and Their Occupants from Airborne Hazards (October 2001)
- f. Other national, international, government and private-sector threat, risk, vulnerability, security, transportation, and force protection guideline standards

18. In addition to the foregoing, the Project EIS should also include analysis for high-rise and regional evacuation procedures in the event of terrorist attack.

19. In conclusion, it is my professional opinion as an expert in the area of

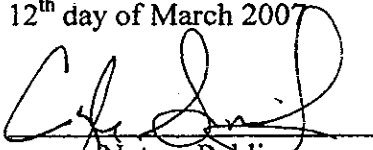
risk analysis of issues related to terrorism security that the EIS' failure to analyze the risk of a terrorist attack as a Reasonable Worst Case Scenario is inexcusable given the Project's intended public uses, scale, construction materials, risk as a potential terrorist attack target, and the prior terrorist attack planning for this specific location.

Dated: New York, New York
March 12, 2007



Professor Norman Groner, Ph.D.

Sworn to before me this
12th day of March 2007



Notary Public

LYLE SMITH
Notary Public, State of New York
No. 02SM6102308
Qualified in Kings County
Commission Expires Dec. 1, 2007

EXHIBIT A

Curriculum Vitae

Norman E. Groner

Profile

25+ years experience solving design problems where people interface with social and technological systems.
Applying behavioral science expertise to problems in cognitive systems analysis and decision-making, needs and heuristics analyses, contextual (field) inquiries, and usability, especially pertaining to fire safety and emergency management

Address

John Jay College of Criminal Justice
445 West 59th Street
Room 3530N
New York, New York 10024
work: (212) 237-8834
fax: (212) 237-8919
cell: (831) 345-3776
email: NGroner@jjay.cuny.edu

Education

| | | |
|---|-------|---|
| Antioch College Yellow Springs, Ohio | B.S. | 1972 (Psychology) |
| University of Washington Seattle, Washington | M.S. | 1976 (Psychology) |
| | Ph.D. | 1979 (Major: Social Psychology) (Minor: Sociology of Organizations) |

Professional memberships

Human Factors and Ergonomics Association
ASIS, International
National Fire Protection Association (member *Life Safety Code/NFPA 5000* Fundamentals technical committee)
American Psychological Association
Society of Fire Protection Engineers (associate)

Dissertation

Perceptions of Public Bureaucracy: Multidimensional Scaling of Eight Municipal Agencies

Professional Experience

- 2003-Current Associate Professor, Department of Protection Management, John Jay College of Criminal Justice, City University of New York
Director of Graduate Program in Protection Management. Courses taught: organizational theory and management, problems in public administration, security and safety in the built environment, emergency preparedness and response. Principle Investigator for NIST grant on transfer of cognitive engineering theory and methods to building emergency problems.
- 2001-2002 Coordinator and co-director for the World Trade Center Evacuation Study Initiative. Organized and facilitated meetings, met with Federal agency representatives, wrote policy papers, research agenda and letter to Congress, wrote and sent emails to member soliciting input and updating activities, established supporting website (www.peopleandfire.com/wtcesi/)
- 1984-Current Independent consultancy in human and organizational factors of fire safety, emergency planning, cognitive systems engineering, and usability. Projects have included: designing interview method and analysis for NIST investigation of WTC attack building evacuations, analyses and proposed changes to software interfaces; assessment of a city's response during an earthquake disaster; design and teaching of seminars on fire emergency planning and board and care code requirements for associations, building managers, and fire service; curriculum planning and writing innovative instructional materials for U.S. Fire Academy college courses; data collection and analyses for survey of egress methods for persons with disabilities for U.S. Architectural and Transportation Barriers Compliance Board.
- 2000-2001 Usability Manager. Impresse Corporation. Tested interface with customers. Conducted contextual field inquiries. Generated usage scenarios and use cases. Devised and maintained database of usability issues. Organized and ran usability team meetings. Participated in design meeting. Maintained intranet usability subsite. Built and edited HTML rapid prototypes.
- 1995-2000 Visiting Scholar/Researcher, Department of Civil and Environmental Engineering, University of California, Berkeley. Developed "Scenario-Based Goal Decomposition" methodology for performance-based design and analysis of safety systems

where humans play important roles in determining successful outcomes. Analyzed prevention and mitigation strategies for earthquake-related fire ignitions, funded by regional gas/electric utility.

- 1990-1994 Consultant, George Mason University. Worked on NIST-sponsored research grants. For four Federal agencies, collected and analyzed data on impact of fire safety requirements on board and care facilities; wrote guide to Life Safety Code requirements for board and care facilities. For GSA and FAA, conducted field usability evaluations of staging areas installed in Federal buildings to protect persons with disabilities; investigated human factors issues of using elevators to evacuate high-rise buildings and aviation control towers.
- 1983-1984 Senior Analyst, JRB Associates, McLean, Virginia. For OSHA, task manager for \$½ million study regulatory impact of revised Benzene standard; designed hazard recognition data base and sample entries; wrote systems safety curriculum materials for OSHA and U.S. Postal Service training institutes.
- 1983 Research Associate, University of Washington. On a NIST-sponsored contract, evaluated and made recommendations about fire emergency plans for residential occupancies in the National Parks.
- 1981-1982 Research Associate, University of Maryland. On a NIST-sponsored contract, wrote fire emergency planning manual for operators of board and care facilities.
- 1979-1981 Psychologist, National Bureau of Standards. Member of four-person team that developed the Fire Safety Evaluation System for Board and Care Facilities; received award for developing method to estimate the difficulty of evacuating board and care homes during fires (now Chapter 5 of ANSI/NFPA 101M where it is used to set required level of building safety). Investigated human behavior during multi-fatality board and care fires.
- 1977-1979 Consultant, Industrial/organizational psychology. While a graduate student, conducted job analysis studies and conflict and team building workshops.
- 1972-1978 Research Assistant, University of Washington. Worked on studies

Groner, N. E. (2004) User-centered Design Can Produce Safer and More Cost-effective Buildings by Supporting the Adaptive Responses of Emergency Teams and Occupants. Proceedings of the 3rd International Symposium on Human Behaviour in Fire. London: Interscience Communications, pp. 457-462.

Groner, N. E. (2003) Mitigation is Part of National Security: Potential for Human Factors Contributions to the Improvement of Building Evacuations. Gateway, Human Systems Interaction Analysis Center Newsletter, Vol. 13, No. 4, pp 19-20.

Pauls, J., and Groner, N. E. (2003) Human Factors contributions to Building Evacuation Research and Systems Design: Opportunities and Obstacles. In Making the Nation Safe from Fire: A Path Forward in Research. Washington, DC: National Academies Press.

Groner, N. E. (2002) A Compelling Case for Emergency Elevator Systems. *Fire Engineering* issue Vol. 155, No. 10 (October, 2002) pp. 126-128.

Groner, N. E. (2002) Viewpoint: A Future Where Engineering Supports People Adapting to Survive Fires. *Fire Protection Engineering*, No. 16 (Fall 2002) p. 3.

Groner, N. E. (2002) Regulating Human Behavior: Using Fire Safety Codes to Maximize Performance. *Extended Abstracts: Fire Protection Strategies in 21st Century Building and Fire Codes Symposium*. Baltimore, MD, September 17-18, 2002, pp. 83-88.

Pauls, J., and Groner, N. E. (2002) Human factors contributions to building evacuation research and systems design: opportunities and obstacles. In *Proceedings of the Workshop to Identify Innovative Research Needs to Foster Improved Fire Safety in the US, 15-16 April 2002*. Washington, DC: National Academy of Sciences.

Groner, N. E. (1999) A Critique of Event Modeling as Applied to Human Reliability and a Suggested Alternative. *Proceedings of the SFPE Symposium on Risk, Uncertainty, and Reliability in Fire Protection Engineering*. Baltimore, MD, May 12-14, 1999, pp. 125-134.

Groner, N. E. (1998) Intentional systems representations are useful alternatives to physical systems representations of fire-related human behavior, *Human Behavior in Fire: Proceedings of the First International Symposium*, University of Ulster, pp. 663-672. (Republished in *Safety Science*, Pergamon, Vol. 38 (2001), pp. 85-94.)

Groner, N. E. (1998) People power: Experts designing fire protection systems for buildings should think of people as part of the solution. *Canadian Consulting Engineer*, Vol. 39, Special Issue (May), pp. 30-32.

Groner, N. E. and Williamson, R. B. (1998) Scenario-Based Goal Decomposition: A Method for Implementing Performance-Based Fire Safety Analysis, *Proceedings of the Second International Conference on Fire Research and Engineering*, pp. 200-211.

Groner, N. E. and Williamson, R. B. (1997) Using a Table Of Desirable Systems States to Integrate Models of Fire Development with Active System And Human Responses to a Fire Scenario, *Proceedings of the Fire Risk and Hazard Assessment Research Application Symposium*, National Fire Protection Research Foundation Society of Fire Protection Engineers, pp. 142-151.

Groner, N. E. (1996) Viewpoint: Putting people into the performance-based design option, *Fire Technology*, Vol. 32, No. 3, pp. 281-284.

Groner, N. E. (1996) Important "People" Problems in Hazard Analyses can be Modeled by Using a Cognitive Systems Approach. *Proceedings of the Symposium on Fire Hazard and Risk Analysis*. National Fire Protection Research Foundation. pp. 422-429.

Groner, N.E. and Chubb, M.D. (1995) Latent human error is the principal threat to the adoption and use of performance-based fire safety requirements. *Proceedings of the International Conference on Fire Research and Engineering*. Society of Fire Protection Engineers, Boston, MA., pp. 203-208.

Groner, N.E. (1995) Selecting strategies for elevator evacuations. *Elevators, Fire, and Accessibility*. American Society of Mechanical Engineers. New York, NY. pp. 186-189.

Groner, N.E., and Levin, B.M. (1995) Will building occupants use elevators for evacuation? Factors affecting compliance with the emergency plan. *Elevators, Fire, and Accessibility*. American Society of Mechanical Engineers. New York, NY. pp. 194-196.

Groner, N.E. (1993) *A Guide to Board and Care Fire Safety Requirements in the 1991 Edition of the Life Safety Code*. (NIST-GCR-96-629) National Institute of Standards and Technology, Gaithersburg, MD 20899. Republished by Life Safety Systems and Strategies, Santa Cruz, CA.

Groner, N.E., and Levin, B. M. (1992) *Human Factors Consideration in the Potential for Using Elevators in Building Emergency Evacuation Plans*. (NIST-GCR-92-606) National Institute of Standards and Technology, Gaithersburg, MD 20899.

Groner, N.E. (1989) *A Fire Department Guide to Evaluating Fire Emergency Plans*. Fair Oaks, CA: Favro McLaughlin and Associates.

Groner, N.E. (1990). Compliance and codes. Interviewing victims and witnesses. In *Fire Related Human Behavior, Course Guide*. Emmitsburg, MD: National Emergency Training Center.

Groner, N.E. (1990) Systems approach to fire emergencies. In *Fire Related Human Behavior, Course Guide*. Emmitsburg, MD: National Emergency Training Center.

Groner, N.E. (1990) Warning systems. In *Fire Related Human Behavior, Course Guide*. Emmitsburg, MD: National Emergency Training Center.

Groner, N.E. (1988). Fire safety practices. In M. P. Janicki, M. W. Krauss, and M. M. Seltzer (Eds.), *Community Residences for Persons with Developmental Disabilities: Here to Stay*. Baltimore, MD: Paul H. Brookes.

Groner, N.E. (1985). Life safety strategies: How a building's designers and users can work together to reduce the risk of death and injury during a fire. *Fire Journal*, 79(5), pp. 27-30, 83-86.

Groner, N. E., and Levin, B. M. (1985). A measure of the difficulty of evacuating elderly and impaired residents from board and care homes. In R. Swezey (Ed.), *Proceedings of the Human Factors Society 29th Annual Meeting*. Santa Monica, CA: Human Factors Society.

Groner, N. E., and Keating, J. P. (1984). *Fire Safety Manual for the National Park Service* (NBS contract no. NP82SBCA1740). Seattle, WA: University of Washington.

Groner, N. E. (1982). *A Matter of Time: A Comprehensive Guide to Fire Emergency Planning for Board and Care Homes* (NBS-GCR-82-408). Washington, DC: National Bureau of Standards. (NTIS No. PB83-139345) Distributed by the National Clearing House for Rehabilitation Training Materials and by Project Share.

Groner, N. E., Levin, B. M., and Nelson, H. E. (1981). Measuring evacuation difficulty in board and care homes. *Fire Journal*, 75(5), pp. 44-50, 109.

Groner, N. E., Keating, J. P. and Loftus, E. F. (1978). Development of coded fire alarms through work association tasks. *Bulletin of the Psychonomic Society*, 11, pp. 139-140.

Groner, N. E., Keating, J. P. and Loftus, E. F. (1978, July 16). Recommendation for a fire alarm and fire safety training: Emergency programs tailored to fit behavior. *Hospitals, Journal of the American Hospital Association*, pp. 111-115. Republished in *Speaking of Fire...* (1983, Winter) (newsletter of the International Fire Service Training Association) pp. 1, 3.

Groner, N. E. (1978). Leadership Situation in academic departments: Relations among measures of situational favorableness and control. *Research in Higher Education*, 8, pp. 125-143.

Klote, J.H., Levin, B.M., and Groner, N.E. (1995) Emergency elevator evacuation systems. *Elevators, Fire, and Accessibility*. American Society of Mechanical Engineers. New York, NY., pp. 131-150.

Klote, J. H., Alvord, D. M., Levin, B. M., and Groner, N. E. (1992). *Feasibility and Design Considerations of Emergency Evacuation by Elevators*. (NISTIR 4870) National Institute of Standards and Technology, Gaithersburg, MD 20899.

- Levin, B.M., and Groner, N.E. (1995) Some control and communication considerations in designing an emergency elevator evacuation system. *Elevators, Fire, and Accessibility*. American Society of Mechanical Engineers. New York, NY. pp. 190-193.
- Levin, B. M. and Groner, N. E. (1994). *Human Factors Considerations for the Potential Use of Elevators for Fire Evacuations of FAA Air Traffic Control Towers*. (NIST-GCR-94-656) National Institute of Standards and Technology, Gaithersburg, MD 20899.
- Levin, B. M., Groner, N. E., and Paulsen, R. (1993). *Affordable Fire Safety in Board and Care Homes: A Regulatory Challenge — Final Report*. (NIST-GCR-93-632) National Institute of Standards and Technology, Gaithersburg, MD 20899.
- Levin, B. M. and Groner, N. E. (1992). *Human Behavioral Aspects of Staging Areas for Fire Safety in GSA Buildings*. (NIST-GCR-92-606) National Institute of Standards and Technology, Gaithersburg, MD 20899.
- Levin, B. M., Groner, N. E., and Paulsen, R. (1992). *Affordable Fire Safety in Board and Care Homes: A Regulatory Challenge — Interim Report*. (NIST-GCR-92-611) National Institute of Standards and Technology, Gaithersburg, MD 20899.
- Keating, J.P. and Groner, N.E. (1990). Interviewing victims and witnesses. In *Fire Related Human Behavior. Course Guide*. Emmitsburg, MD: National Emergency Training Center.
- Kent, M. B., Logan, A. B., and Groner, N. E. (1984). *Paperwork Burden Analysis of the 1-6-84 Draft Benzene Standard*. (OSHA Contract No. J-9-F-2-0069). McLean, VA: JRB Associates.
- Kent, M. B., Perry, W. G., Gallagher, K., Groner, N. E., Weintraub, J. M., New, C. B., and Allison, C. J. (1984). *Technological Feasibility and Economic Impact Study of Alternative Standards for Benzene*. (OSHA Contract No. J-9-F-2-0069). McLean, VA: JRB Associates.
- Klote, J. H., Deal, S. P., Levin, B. M., Groner, N. E., Donoghue, E. A. (1993). *Workshop on Elevator Use During Fires*. (NISTIR 4993). Gaithersburg, MD: National Institute of Standards and Technology.
- Nelson, H. E., Levin, B. M., Shibe, A. J., Groner, N. E., Paulsen, R. L., Alvord, D. M., and Thorne, S. D. (1983). *A Fire Safety Evaluation System for Board and Care Homes* (NBSIR-83-2659). Washington, DC: National Bureau of Standards.
- Morasch, B., Groner, N. E., Keating, J. P. Type of activity as a mediator of perceived crowding. (1979). *Personality and Social Psychology Bulletin*, 5, pp. 223-226.