

**The Implications of September 11, 2001 and Terrorism on
International Urban Form and Various Classes of Real Estate**

By John S. Baen, Ph.D.

Abstract

Terrorism has been a fact of life in various international urban centers for the last twenty - (20) years. The September 11, 2001 event in New York City, NY and Washington, DC will have lasting effects on corporate and family real estate locational decision making. The paper discusses both the broad and specific evidence of changes in urban form and projects, the possible changes in real estate demand for retail centers, office buildings, residential and other types of property. The long-term decision-making and nature of real estate as a fixed investment as places for businesses to function may have changed forever along with future urban form.

Contact

John S. Baen, Ph.D.
Professor of Real Estate
University of North Texas
FIREL Department
PO Box 310410
Denton, TX 76203-0410
Office Phone: 940-565-3071
Cell Phone: 940-507-0312
Residence Phone: 940-567-3120
<http://www.coba.unt.edu/firel/baen/>

This paper will be presented for the American Real Estate Society (ARES) Meeting, Monterey, California April 3 - 5, 2003. Please do not publish or reproduce any part of this DRAFT without contacting author. Comments and suggestions welcome.

The Implications of September 11, 2001 and Terrorism on International Urban Form and Various Classes of Real Estate

By John S. Baen, Ph.D.
University of North Texas

Introduction

While the world watched two (2) hijacked airplanes crash into the World Trade Center in Manhattan, New York and another crash-site at the Pentagon outside of Washington, DC, the U.S. joined the rest of the world in fully realizing terrorists' attacks as a fact of life. Except for the bombing of the Federal Building in Oklahoma City in 1995, Americans had the misconception that terrorism would not and could not occur to the extent of the New York human losses, property losses, disruption of business and national economic shock.

Webster's Dictionary defines terrorism and terrorist as:

Terrorism, *n.* Act of terrorizing, or state of being terrorized; specif., a mode of governing, or of opposing government, by intimidation.

Terrorist, *n.* One who favors or practices terrorism; specif. [often cap.]: An agent or partisan of the revolutionary tribunal during the Reign of Terror in France.

It is important to note that this research paper makes no distinction between foreign or domestic terror and assumes that the implications on the economics of various types of property and trends are the same. U.S. President Bush pronounced on page one September 12, 2001 that the tragedies were an "Act of War" with lead stories in major newspapers entitled "Carnage in New York" "Horror, Disbelief and Thousands of

Victims” “Pentagon In Flames” “Tragedy Redefines America’s Priorities” (USA Today 2001).

A tendency to blame any and all present and future negative occurrences in business and the world economy on the 9-11 tragedy is unfortunately an oversimplification by the popular press and politicians. Prior to September 11, 2001 there was every indication that the U.S. was headed into a significant slowdown or recession. The terrorist attack accelerated that trend and added another dimension to property investment risk in America. Serious future value and net operating income (NOI) implications to institutional, investment-grade, real estate in the form of higher operating costs and lower demand for office world-wide space are deeply embedded in the New York and Washington, DC attacks.

The immediate and short-term effects to New York City and the U.S. were horrendous in regard to loss of life, property, disruption of financial markets, disruption of people’s lives and businesses. The objective of this paper is to consider the long-term implications to various classes of real estate investments, and changes in urban form as a result of “9-11” beyond the natural real estate and business cycles that are always in motion. As the U.S. has unfortunately joined the international community as a recent victim of urban terrorism, it is time that investors, business, urban planners, and city governments consider policy changes and a fresh look at the urban landscape and property investments of the future.

Types of Terrorism and Property Threats

It is important that the general population and policy-makers not to over-react, become paranoid, or overstate the possibility or likelihood of the various types of terrorist threats that could effect other locations. These threats, however, are real and the next occurrence is more a question of where, when and what type or extent of damage may result.

Table 1: Types of Terrorism and Property Threats

(The Implications of Terrorism on International Urban Form and Property Investment by John S. Baen, Ph.D.,
01/12/2002; University of North Texas; baen@unt.edu)

TYPES OF THREATS / TERRORISM	LIKELY TARGET	REAL ESTATE EFFECTS	OCCURRENCES
I. Bombs Car Bombs	Crowded Urban Center, Tunnels Bridges	Destruction	Common in Middle East
Truck Bombs	Below Ground Parking / Gov't Buildings	Destruction	World Trade Center 1993; Oklahoma City Federal Building 1995; Various embassies and military targets
Boat / Ship Bombs	Shipping Port and Nearby Urban Center	Destruction	USS Cole 2000
Human Bombs Placed Bombs	Bus, Subway, Sporting Events Large Buildings	Destruction Destruction	Common in Middle East None Verified
II. Aircraft On-board Explosions Guided Attacks	Random Urban / Rural Areas High-rise Office Buildings	Random Disruption	Pan Am Lockerbie, Scotland World Trade Center, Pentagon 2001; Bank of America/Florida 2002
Aerosol Sprays (Biological / Chemical)	Urban Center / Sporting Events Various	Human Casualties	Tokyo, Japan 2000 / Ebola Outbreak in Africa 2002
Stolen Military Aircraft / Armaments		Destruction	None Verified
III. Missiles Hand-held / Stolen Military	Aircraft	Random	None Verified in Urban Areas
IV. Airborne Chemical / Biological Mail Contaminates (Anthrax)	Postal Centers / Anywhere	Long-term contamination	U.S. Postal Service 2001(New Zealand Rabbit Virus 2000)
**HVAC Contaminates (Anthrax, Legionnaire's Disease, Black Mold, etc.)	Office Buildings	Long-term contamination	US Senate Office Building (via mail)
"Dirty" Bomb (Anthrax)	Urban Centers / via dust	Long-term/large area contamination	(NY Asbestos Dust 9-11 example)***
Animal Infections Crop Infections	Feedlots / Farms / Ranches Seed Companies / Farms	Loss of Land Use Loss of Land Use	UK 2001 (terrorism not verified) None Verified (wheat rust suspected)

Infected Human Carrier	Central Business Districts or Sporting Events	Human Casualties	None Verified
Water Supply Contamination	Metropolitan Areas	Human Casualties	None Verified
<u>V. Nuclear</u> ****Nuclear Bomb Detonation Nuclear Dust or “Dirty Bombs” (in combination with any I-IV above)	Central Business Districts Central Business Districts or Nuclear Power Plants	Destruction Long-term/large area contamination 100+ years	None During Peace Time None During Peace Time
<u>VI. Electronic</u> Financial Markets Communications Transportation System Disruptions Vehicle, Machinery, Aircraft Disabling Energy Pulse Power, Water, Gas Disruptions Data and Hardware Destruction	Banks, Stock Markets General Population Public Transportation / Flight Control Towers/Tunnels/Bridges Aircraft/Auto Traffic Metropolitan Areas Corporate Offices	Business Disruption Business Disruption Business Disruption Business Disruption Business Disruption	None Verified None Verified None Verified None Verified None Verified
<u>VII. Low Tech Urban Terrorism</u> Freeway Nails, Oil, Grease	Major Freeway Interchanges	Business & Urban Disruptions	None Verified
<u>VIII. Hoaxes</u> (many of those listed above) Bomb Threats, etc.	General Business Disruption	Business Disruption	Commonplace

*Ebola reported in 4 African Countries with current outbreak in Mekambo, Gabon, Africa. (Zavis 2001)

** HVAC = Heating Ventilation and Air Conditioning Systems

*** 700 New York Firefighters have filed legal claims for asbestos, chemical, PCB lung-related elements including spitting blood, asthma and cancer risks . (Ritter¹ 2002)(Ritter² 2002)(Ruiz and Gittrich 2002)

**** Suitcase Nuclear Devices, or low-tech delivery via briefcase carrying person or on boats, trains, commercial aircraft, etc. “The United States is more likely to suffer a nuclear, chemical, or biological attack from terrorists using ships, trucks, or airplanes than one by a country using long-range missiles, according to a new U.S. intelligence estimate.” *Dallas Morning News*, January 11, 2002. Stopping Porta-Nukes or briefcase-sized bombs is a national U.S. priority (Helman 2001).

Unfortunately, however, there is an increasing possibility that isolated incidents of some of these terrorist threats will occur in the future. As real estate and urban infrastructures are long-term investments due to their fixity or investment permanence (Jacobus 1999), the questions become - Should companies, property investors and cities outside New York City:

1) continue as usual in pre 9-11-2001 investments, corporate locational and lease renewal decision-making and urban policies? (The risk of terrorism is low and insignificant at any one location and even lower in suburban / rural areas.)

2) consider decentralization of corporate, business and governmental functions to various locations? Examples: IBM, GE, etc. (Also known conceptionally as diversification to reduce risk in the finance literature.)

3) adopt a long-term strategic plan to move to a single suburban or semi-rural corporate campus with high security fencing, complete controlled gated access, landscaping / buffer zones and zero fear of a tenant mix that may include a higher risk target tenant? Examples: Sprint, Fidelity Investments, Microsoft, Merrill Lynch, etc.

4) globally expand corporate locations to have fully integrated business data duplications and functions in different countries? Example: ExxonMobil, Shell, International Banks, etc. (decentralization on a global scale)

Existing ownership and long-term lease commitments by companies will soften or delay property decisions of corporations and city governments that will not require them to consider these questions simultaneously in the near future. However, over time, urban

growth and increased security measures in regard to design, structural requirements, emergency planning, and property management will add a great deal of cost to traditional high density urban development. Will cities, investors, insurance companies and users of space be able to afford the additional costs of future Central Business District (CBD) development or redevelopment?

Size and Scope of New York 9-11

Beyond the sadness of human suffering and loss of life, it has been estimated that direct property losses were \$20-\$30 billion and 300 businesses were directly affected by the attack. Over 31 commercial / office tenants formerly occupied over 100,000 square feet of space according to Insignia / ESG Insurance Company (McMorrow 2001). Buildings that were destroyed, structurally damaged and non-structurally damaged buildings or buildings requiring expensive cleaning for asbestos dust, totaled between 27-29 million square feet, however, comprise less than four percent (<4%) of the Manhattan, New York office market. (Grubb & Ellis, Cushman & Wakefield and Insignia / ESG) When viewed only from the loss of office space from a national and international standpoint, in absolute terms, the loss was even less significant. Available vacant and subleaseable space in the area roughly equaled the amount of space destroyed or damaged, with many companies choosing to relocate in the same office market.

On September 11, 2001, the local vacancy rate in Manhattan was approximately 25.5 million square feet with additional sublease space expected to be available as subleaseable / available space due to dot.com underutilized space.

Original tenant locations, previous square footages and replacement space size and location are presented in Table 2 and indicate an initial drop of emergency replacement office space collectively of approximately 30%.

Table 2: Tenant Grid Relocations and Spider Map Relocations

TENANT*	PREVIOUS ADDRESS(ES)*	PREVIOUS SQUARE FOOTAGE*	NEW ADDRESS(ES)	DISTANCE IN CITY BLOCKS / MILES ¹	NEW SQUARE FOOTAGE*	TOTAL % NET CHANGE
Lehman Brothers	3 World Financial Center	1,100,000	399 Park Avenue		400,000	+44%
	1 World Trade Center	461,000	180 Water Street		464,000 ^P	
			Sheraton Hotel 790 Seventh Avenue		665 rooms	
			70 Hudson Street Jersey City, NJ		150,000	
			745 Seventh Avenue		1,100,000	
Securities & Exchange Commission	7 World Trade Center	106,000	233 Broadway		140,000	+32%
New York Stock Exchange	2 World Trade Center	48,000	14 Wall Street		100,000 ^P	+200%
American Express	3 World Trade Center	1,040,000	400 Atlantic Street Stamford, CT		175,000	<-24%>
	7 World Trade Center	106,000	1185 Avenue of the Americas		120,000	
			101 JFK Parkway Short Hills, NJ		195,000	
			5 Woodhollow Road Parsippany, NJ		317,040	
Empire Blue Cross	1 World Trade Center	461,000	450 West 33 rd Street		400,000	+64%
			9 Metrotech Brooklyn, NY		250,000 ^P	
			11 West 42 nd Street		105,429 ^P	
Bank of New York	101 Barclay Street	1,200,000	620 Avenue of the Americas		75,000	<-50%>
	100 Church Street	350,000	330 West 34 th Street		128,000	
	1 Wall Street	670,000	1290 Avenue of the Americas		90,000	
			63 Madison Avenue		98,000	
			5 Penn Plaza		52,000	
			111 Eighth Avenue		60,000	
Port Authority of New York and New Jersey	1 World Trade Center	800,000	225 Park Avenue South		126,000	<-49%>
			233 Park Avenue South		85,519	
			Gateway Center Newark, NJ		200,000	
AON Service	2 World Trade Center	219,000	685 Third Avenue		297,000	+36%

Zurich America	1 Liberty Plaza	70,000	601 West 26 th Street		95,000	+37%
	1 Chase Plaza	76,000	1 Hudson Square		75,000	
			105 East 17 th Street		125,000	
Canadian Imperial	1 World Financial Center	500,000	622 Third Avenue		150,000	<-70%>
Bank of Commerce	1 Battery Park Plaza	35,000	417 Fifth Avenue		130,000	+1379%
			490 Seventh Avenue		135,000	
			Harborside Plaza		217,526	
Oppenheimer Funds	2 World Trade Center	231,000	1 Penn Plaza		112,000	<-8%>
			498 Seventh Avenue		100,000	
Marsh USA / Guy Carpenter	2 World Trade Center (Guy Carpenter)	320,000	1166 Avenue of the Americas		237,000 ^P	<-65%>
	1 World Trade Center (Marsh USA)	361,000				
Citigroup	7 World Trade Center (Salomon Smith Barney)	1,400,000	100-300 Stamford Place Stamford, CT		140,000	<-90%>
Hartford Insurance	7 World Trade Center	122,564	2 Park Avenue		145,000	+18%
Instiner	1 World Trade Center	65,000	875 Third Avenue		107,000	+65%
Thatcher Proffitt & Wood	2 World Trade Center	129,000	11 West 42 nd Street		101,000	<-22%>
Fiduciary Trust Company	2 World Trade Center	207,146	600 Fifth Avenue		183,000	<-12%>
Kemper Insurance	1 World Trade Center	92,232	101 Park Avenue		78,000 ^P	<-15%>
Morgan Stanley Dean Witter	2 and 5 World Trade Center	1,300,000	1140 Broadway		100,000 ^P	<-35%>
			1 Hudson Square		100,000 ^P	
			825 Third Avenue		140,000 ^P	
			750 Seventh Avenue		500,000 ^P	
Deloitte & Touche	2 World Financial Center	245,000	825 Fifth Avenue		60,000	
			Stamford, CT		120,000 ^P	<-27%>
9-11 Previous Total sq. ft.		11,714,942	Post 9-11 Total sq. ft.		8,159,179	<-30%>**
			Out of State sq. ft.		982,559	
			Percent Moved Out of State		***12%	

* = Data: Compiled by Colliers ABR and Grid

** = While data indicates a 30% reduction in total space, this is only 60 days since the 9-11 event and may not reflect these firms' long-term space decisions. Many firms had other locations owned or leased in which to relocate for short or long-term occupancy. It should also be noted that if an estimated 3500 human lives were lost in the WTC complex that formerly occupied 200-sq. ft. per individual, this sadly equates to a reduced immediate necessity of over 700,000 sq. ft. of office space.

***=Goldstein (2002) reported more than 50,000 financial services employees were permanently displaced by the destruction of the WTC and that 19,000 of these were moved outside of NYC. He further reports that the remaining 129,000 financial service jobs in Lower Manhattan, NY are "at risk of leaving" according to a McKinsey & Co. report.

P = Pending 11/2001

¹ Spider Map and distances provided on request.

As replacement space is rarely “ready” and requires space planning and finish-out, business continuance requires innovation and temporary “flex-space.” The best example of this is Lehman Brothers leased 660 hotel rooms at the Sheraton Manhattan Hotel and turned them into temporary offices. (Morrow opt. cit: Grid opt. cit)

Additional analysis of data presented by Colliers ABR and Grid (2001) indicates a preferential move from the City of New York to suburbs and/or out of state of 12%. Various supply and demand factors in the office market, as well as immediate availability of alternative space, may have played a part in these relocations. These long-term relocations will have a long-term impact on investor and city revenues for a very long period of time. The further losses to small firms (restaurants, shops, etc.) who service the daytime worker population will be staggering.

The adjoining 92 acres to the immediate west of the World Trade Center, and built on land / harbor fill-dirt from the WTC excavation when originally began in 1968. The residential area, known as “Battery Park City,” prior to September 2001 housed 9000 residents. As of December 2001, only 5400 residents have returned to reoccupy their homes. (The Economist 2001) Further research is needed to identify resettlement, relocation or the status of the “missing” pre 9-11 residential tenant / owners. Economist project zero(0) appreciation in New York house prices for the next twelve-(12) months while the rest of the U.S. market, except San Francisco, appreciates. (*Wall Street Journal* 2002)

Effect of 9-11 on Urban Center Functionality Outside of New York City

The cost of city provided services will increase and the efficiency of cities will decrease requiring increased tax revenues for the same level of services (pre 9-11).

- 1) Additional cost of security, security planning, personnel and screening equipment for buildings and all mode of travel will be significant on new and continuing drag on the economies, businesses, and federal / local governments for the long-term.
- 2) City fire and police training, new equipment and employee turnover will increase costs of local government.
- 3) There will be increased traffic and highway travel due to public transportation security delays (subways, buses and air travel security delays). This will require more roadway maintenance, traffic police, tunnel and bridge maintenance and security that will cost more and reduce the overall efficiency of the cities and businesses.
- 4) Corporate relocations and/or decentralization of businesses and various business functions to suburbs or semi-rural corporate companies will have negative impacts on property tax revenues, local sales tax revenues (retail, restaurants, etc.) and add to vacancies and loss of property values in the central business districts (CBDs).
- 5) Municipal bond rates will increase and urban bond rating will decrease in many urban cities as a result of real and perceived increased risks by institutional investors due to terrorism. Landlords and/or tenants in “Trophy Property” high-rise buildings will be forced to pay much higher insurance costs (300%) to stay in the central business districts.

(Grant 2001)

- 6) Additional city taxes of older cities may drive corporations to other areas or countries in order to reduce business' operating costs.
- 7) Construction costs of new or replacement buildings in urban centers will cost significantly more due to:
 - a) increased land security buffer zones (lower floor area ratios / relative to land area) to reduce "street-side" exposure to car / truck bombs. (*Washington Post* 2001)
 - b) increased structural design requirements (a "safe zone" every 10 floors of new high rises, etc.)
- 8) Major corporate residents of urban centers may demand extra and special security measures provided by cities or will threaten to relocate. (Fong and Grant 2001)
- 9) High-density urban centers may be required to implement safety and security measures to assist emergency efforts in the event of similar terrorist attacks:
 - a) GPS and 3-D precise surveying of every building and digitized floor plans
 - b) Tenant rosters kept by the city of every building occupant and their location on each floor (similar to an airline passenger roster). Early reports of 6000 deaths in the 9-11 event have been reduced to 2893 person with 309 missing. Office worker information was lacking and all information was on-site for many firms and was destroyed.
 - c) implementation of ordinances regulating the coming and going of every person, vehicle, delivery truck, etc., in a high-rise public parking garages and particularly below ground skyscraper building parking areas

- d) identification and “protection” of every strategic pipeline, bridge, electrical substation, tunnel, public utility, etc.
 - e) conceptual or implemented concrete road barrier planning for restricting traffic near federal buildings and CBDs (currently standard policies in parts of London and Washington, DC)
- 10) The loss of hotel / convention business, room taxes and reduction in business travel is a significant loss in city income and chances to market an area for corporate / business moves. (Buckeley 2002)
- 11) U.S. border towns and ports may suffer severely due to the effective closing of U.S. borders to undocumented workers, shoppers, and unofficial U.S. residents. There currently is a proposal to consolidate U.S. Immigration and Naturalization, Customs and the Coast Guard functions.

Effects of 9-11 on Metropolitan Institutional-Grade CBD Office Buildings, Businesses’ Operating Costs and Office Workers / Productivity

The booming economy and growth of the dot.com businesses of the 1990’s were both cooling prior to 9-11, while developers were continuing to create excess vacant new space during a time of increasing vacancies and leased office space having rents being paid but available for sublease. Office space was predicted to be in less demand with falling rents for the following business efficiency reasons (Baen 2001):

- 1) Less space trends per office employee

- 2) More telecommuting from homes, cars and “road warriors”
- 3) More “Flex” / Rotating Space (IBM)
- 4) More efficient technology:
 - ATM (example: fewer bank tellers)
 - Word processing (fewer secretaries)
 - Cell phones (great time savers)
 - Fax and e-mail (faster than mail)
 - Electronic filings and information
 - Digital files and storage (fewer clerks and space)
- 5) Overbuilding
- 6) Dot Com Meltdown

Further reduced demand due to 9-11 will be accelerated particularly in the high-rise CBD “trophy” office buildings that could be possible targets in Any City, USA or the world. The January 2002 Tampa, Florida airplane attack on the Bank of America Tower would not be called a “Trophy” office building in New York City but was the tallest building in that city’s skyline.

The unprecedented U.S. booming economy of the 1990’s was based on three (3) primary factors: 1) the growth of technology and its associated increased productivity gains; 2) a liberal policy and growth in immigration; and 3) a period of peace and lack of terrorism. There were obvious signs of a business cycle recession and general slowdown in the economy prior to 9-11.

However, the 9-11 event and other terrorist attacks (anthrax, etc.) have the potential over an extended period of time to wipe out all positive gains due to technology efficiency gains over

the last ten (10) years. 9-11 will cause a reallocation of human, government and financial resources to non-productive or negative growth activities such as increasing security. The cost of doing business and inefficiencies will increase along with office vacancies substantially due to the following reasons:

- 1) Many high-rise office employees feel insecure in their working environment and are therefore less productive.
- 2) The cost of all types of business and employer provided benefits has increased substantially.
 - building and hazard insurance
 - health insurance
 - business continuance insurance
- 3) Duplicate data storage, back-up systems and security of business documents has become an absolute necessity. (These back-up systems in the financial district were a fabulous success and were fully tested by the terrorist attacks, however many other governments and business areas are exposed in this area.)
- 4) Increased cost of building security, personnel and systems will reduce business profits and work process efficiencies while increasing the survivability of terrorist attacks.
- 5) Employee business travel, delivery and receiving of shipped goods and travel time will increase due to additional security, baggage and vehicle searches.
- 6) Local property and equipment / inventory taxes will increase to support increased cost of government services.

- 7) Employee emergency planning and building evacuation drills will occur more frequently and with more anxiety and cause a reduction in office worker productivity.
- 8) The receiving and opening of large volumes of mail will either cause employee anxiety and/or additional investment in radiating / scanning devices. This will accelerate the use of all forms of communications by technology rather than actual mail or business meetings (videoconference, e-mail, etc.). This will also lead to higher postage rates and be a further drag on businesses.
- 9) Businesses located in “signature,” “trophy,” or landmark high-rise buildings may have some talented employees who refuse to return to buildings after a minor event or bomb scare. If not offered a telecommuting or officing at home opportunity, these employees could sue the employer if fired. After 9-11, what would a jury say to being afraid of working in a tall building?
- 10) All types of business and property insurance and employee benefits and property insurance and employee benefits have increased:
 - property and casualty
 - terrorist damage
 - health insurance
 - life insurance (volume not cost)
 - business continuance insurance
- 11) Worker anxieties have increased in tall buildings with some office tenants actually having operational military surplus parachutes under their desks on the 49th floor and higher of the Chicago Sears Tower. (Wilgoren, *The New York Times*, 9-23-02)

- 12) Office workers are taking more frequent breaks at the ground level and staying longer which reduces productivity. (Observed although may not be a long-term trend and may diminish over time.)
- 13) While no data currently exists, there are many articles which state that many talented office workers and executives are choosing to retire early, or making radical life-style changes away from office environments. This may be a positive for the lives of the individuals, however it is a serious loss of efficiency, training, employee knowledge and experience for the previous employing firm.
- 14) Firms at various locations within metropolitan areas may be forced to pay more or less salaries based on the perception of safety of the workplace / office environment and/or location relative to the location of an actual or potential terrorist event. Suburban corporate campuses may be able to attract more talented employees for lower salaries and/or benefits than central city locations.
- 15) Likely post 9-11 revised and fully enforced building codes, safety ordinances and cost to upgrade water utilities for supplying adequate fire-fighting water volumes for multiple buildings along with other safety measures and personnel, are costs that landlords, their tenants or the cities can simply not afford.

Implications of 9-11 on Residential Housing Investments and Decisions

To consumers of housing, whether renting or owning, the perception of “a safe place” and a healthy environment is paramount. In times of crisis, war, sudden chaos or evacuation for any reason, whether one owns or rents their home really is a mute point.

The traditional American family generally obtains employment prior to purchasing a home and then seeks housing. The balancing act of weighing housing price / cost with the convenience or distance to commute is based on many factors beyond the scope of this paper. However, generally the longer the commute from the major cities, the more affordable (relatively) the housing. The 9-11 event may have interesting side effects in the housing markets of New York and for that matter, the world.

Some interesting trends have been noted recently although they may subside over time if not other terrorist attacks occur anytime soon:

- 1) Second homes and vacation homes have been selling in far greater numbers than usual for the Northern Hemisphere slow winter months.
- 2) Rural farm-lets and lifestyles blocks or building sites have been selling extremely well throughout the U.S. and are usually the first market to slow at the first signs of a U.S. recession.
- 3) U.S. farms and ranches have been selling at relatively high prices although farm commuting prices and incomes are expected to drop 20% during 2002.

www.ers.usda.gov/briefing/farmincome/fore.htm

Land Use and Property Demand

Various types of property are projected in this paper based on real estate market activity since 9-11. Serious statistical analysis and research is needed over a long period of time to quantify the trends of various classes of property and land uses. (See Table 3)

Table 3 Land Use and Property Demand, Use, and Values Post 9-11

by John S. Baen, Ph.D., University of North Texas

	Pre 9-11 Trend*	Post 9-11 Projection
<u>Airport / Travel Related</u>		
Commercial Airlines	↑↑	↓↓↓
Private Aircraft / Schools	↑	↓↓↓
Airport Retail	↑	↓↓↓
Private Airport Parking	↑	↓↓↓
Airport Related Hotels	↑	↓↓↓
Interstate Motels	←→	↑↑
CBD Hotels	↑	↓↓↓
<u>Office Properties</u>		
CBD High-rise	↑	↓↓↓
Suburban Office	↑	↑↑
Semi-rural Corp. Campus	↑	↑↑
CBD Office Land	↑	↓
Suburban Office Land	↑	←→
Government Office / Facilities (Federal, Local)	↓	↑↑↑
<u>Retail</u>		
CBD Retail	←→	↓
Suburban Mall	←→	←→
Wal-Mart Centers	↑	↑↑
Internet Retail	↑	↑↑↑
<u>Residential</u>		
CBD High-rise / Condos	↑	↓
Suburban Residential	↑	↑↑
Rural / Small Town Residential	↑	↑↑
Vacation / 2 nd Homes / Rural	↑	↑↑↑
Metro Rural Land	↑	↑↑↑

*Number and direction of arrows

↑ = increasing demand, use, value (intensity / trend)

←→ = stable market in equilibrium (intensity / trend)

↓ = falling demand, use, value

Conclusions

Modern technology in the form of air travel, micro-biology, manufactured nuclear materials, and the creation of chemical warfare agents, have become tools of destruction and fear for modern 21st century cities. The fact that three (3) jet airliners, or letters containing small amounts of anthrax dust, or a low-tech nuclear dust truck bombs could render an entire buildings and large areas of CBDs destroyed, unusable and worthless for years, decades, even centuries, . . . is a serious threat to the civilized world, their economies, and even governments. The effected area in New York was approximately 400 acres covered by toxic asbestos dust. This area of land, in the shape of a triangle (1.2 – 1.2 - .9 miles), would more than cover most U.S. CBD high-density downtown areas.

Globalization of industry, free trade and the free flow of information, technology and people (immigration) have allowed the standards of living and quality of life to increase worldwide. The sphere of business influence of the U.S. on the world economies is not unlike the powerful Roman Empire and civilization of the Western World (275 BC – 476 AD). The fall of Rome was brought about by relatively “low-tech” Germanic “terrorist” or barbarian’ attacks, that disrupted free trade and commerce. Perhaps 21st Century “low-tech” terrorists are succeeding in utilizing “high-tech” with “low-tech” delivery systems to attack modern cities and economies.

The recent 9-11 attacks will result in the acceleration of the following trends in terms of the 21st Century urban frontiers:

- 1) A rapid increase in the rate of suburbanization and decentralization of businesses and urban dwellers.

- 2) A painful change in forms of city government financing services offered and regulations.
- 3) Increased businesses and property operating costs in the form of additional security, insurance costs, and employee benefits that will offer no productive return on the expenses.
- 4) The perception of a “safe work place” and community has changed which is a drag on productivity for the entire world economy.

The concept that real estate is a long-term investment with a sense of permanence and safety has been altered. It should be noted from ancient history that cities build again after being destroyed by disasters and war, although more often than not, not in one generation, and quite often not by the same people or government.

It is imperative that the war on terrorism succeeds, even at the high cost of the free economy and reducing personal freedoms.

- Baen, John, "Advanced Public Property Management and New Perspectives / Challengers – THINK TANK – GSA Corporate Services" presented at Texas A&M University Center for Executive Development, August 3, 2001, Book #4.
- Buckeley, William, "Travel Fears, Economy Trim Turnout at Corporate Conventions, Meetings," *The Wall Street Journal*, January 11, 2002, p. B-1.
- Colliers, ABR and Grid, "Relocations After September 11: Who's Leasing Where," *Grid*, Volume 3 Number 9, November 2001, p. 21.
- Fodor's 2002, "New York City – The Guide for All Budgets" Updated every year with a Pullout map and color photos. www.fodors.com (It should be noted sadly that the 2002 guide still listed activities of interests within the destroyed World Trade Center Towers, photographs and descriptions of the towers, pp. 40, 46, 47.)
- Fong, M. and Grant, P., "May Says American Express Seeks Extra Security to Return Downtown," *The Wall Street Journal*, November 29, 2001, p. B2.
- Goldstein, Alan, "Financial District Is A Survivor, But Its Greatest Test Lies Ahead," *Dallas Morning News*, January 13, 2002, p. 1H.
- Grant, Peter, "Market for Trophy Property Slows as Insurance Choices Start to Fall," *The Wall Street Journal*, 1-11-2002, p. B8.
- Helman, Christopher, "Stopping Porta-Nukes," *Forbes*, December 24, 2001, p. 97.
- Jacobus, Charles, *Texas Real Estate*, Prentice Hall, Eleventh Edition, p. 29.
- Kern, Josh, "Mapping Ground Zero," *Professional Surveyor*, November 2001, pp. 48-52.
- McMorrow, Eileen, "Looking For Space," *Facilities Design and Management*, October / November 2001, pp. 52-53.
- Michelsen, Michael, "Attack on America – How Surveying Technology Assisted in Rescue Efforts at the World Trade Center," *Professional Surveyor*, November 2001, pp. 22-26.
- Rand McNally, New York City Maps, Area Maps, Pullout map, Fodor's 2002.
- Ritter, Malcom, "Firefighters At Ground Zero Complaining of Illnesses," *Fort Worth Star Telegram – Associated Press*, January 13, 2002.
- Ritter, Malcom, "Health Problems Hitting WTC Rescuers," *Dallas Morning News - Associated Press*, January 13, 2002, p. 26A.

Ruiz, A. and Gittrich, G., "Use of Undocumented Workers in NYC Attack Clean-up Criticized," *New York Daily Times* and *Fort Worth Star Telegram*, January 13, 2002.

The Economist, "The Recharging of the Battery," *The Economist*, December 22, 2001, p. 27.

Wall Street Journal, "Bouncing Back? Despite Economy, Home Prices Start Gaining Ground," January 11, 2002, p. W8.

Washington Post, "Protecting the Washington Monument," *Houston Chronicle*, Saturday, December 22, 2001, p. 14A.

Wilgoren, Jodi, "Terror Threat Strikes Fear in Sears Tower in Chicago," *The New York Times / National*, September 23, 2001.

Dr. John Baen's Link

<http://www.coba.unt.edu/firel/baen/>

There are 7 links under Research Papers.

- 1. The Implications of September 11, 2001 and Terrorism on International Urban Form and Various Classes of Real Estate**
- 2. The Real Estate and Urban Form Implications of Contemporary Technology in Developing and Third World Countries**
- 3. The Future Value Implications of E-Commerce on Urban Form, Office, Warehouse, Residential and University Owned Real Estate**
- 4. The Effects of Technology on Retail Sales, Commercial Property Values and Percentage Rates**
- 5. Advances in Cutting Edge Technology in the Real Estate Profession**
- 6. The Coming Downsizing in Real Estate: The Implications of Technology**
- 7. Resume of John S. Baen, Ph.D.**

Contact

John S. Baen, Ph.D.
Professor of Real Estate
University of North Texas, FIREL Department
PO Box 310410, Denton, TX 76203-0410
Office Phone: 940-565-3071; Cell Phone: 940-507-0312
Residence Phone: 940-567-3120