The Agora Market: Commercial (Retail) Space

Tysons Corner Center is the largest mall in the Washington market and the tenth largest in the United States (GLA: 2.1 million sq. ft. on 2 levels). Managed by Wilmore Property Management, LLC, Tysons hosts approximately 20 million shoppers per year. (as quoted from the shoptysons.com website).

Tysons Corner Center averages more than 57,000 shoppers each day. (as quoted from the shoptysons.com website)

From ICSC website: Michael Baker is director of research for ICSC.

ICSC data have previously pegged the average duration of a mall visit at about 75 minutes; the 2001 figure was right in line with precedent, at 78.1 min. Larger centers attract longer stays. Centers > 800,000 sf enjoy an average visit duration of 79.5 minutes, compared with 73.4 minutes for those under 800,000 sf.

Floor Area = 2.1 million sq. ft. are used by 57,000 shoppers each day.

Thus a preliminary design floor area can be derived from: 2,100,000 ÷ 57,000 = 36.84 sq. ft. per person, but this assumes that 57,000 people stay at the mall from opening at 10:00am to closing at 7:00pm.

If the average visit is 90 minutes and the mall is open for 9 hours, then the 57,000 people can be viewed as coming in 6 different groups with an average of 9,500 people in each group.

Floor Area = 2.1 million sq. ft. are used by 9,500 shoppers in each 90 minute period of each day.

Thus a preliminary design floor area can be derived from: 2,100,000 ÷ 9,500 = 221 sq. ft. per person.

We know people will come in different sized groups. It could be assumed that double the average numbers of people use the mall during the busiest three hours of the average day. Optimum mall design floor area accommodates this number of people.

Floor Area = 2.1 million sq. ft. are used by 19,900 shoppers the busiest time of day.

Thus a reasonable design floor area can be derived from: 2,100,000 ÷ 19,900 = 110.5 sq. ft. per person.

We know people will come in different sized groups. It could be assumed that double the average numbers of people use the mall during the busiest three hours of the average day. Optimum mall design floor area accommodates this number of people.

Floor Area = 2.1 million sq. ft. are used by 19,900 shoppers the busiest time of day.

Thus a reasonable design floor area can be derived from: 2,100,000 ÷ 19,900 = 110.5 sq. ft. per person.

The space required for 57,000 people per day is: (57,000 ÷ 3) x (110.5 to 144sf) = 2.1 to 2.7 million sq. ft.

110.5 sq. ft. = 10.5 foot square area. Adding a 30% safety factor gives us a 12 foot square = 144 sq. ft.

Thus a reasonable design floor area can be derived from: 2,100,000 ÷ 19,000 = 110.5 sq. ft. per person.

Floor Area = 2.1 million sq. ft. are used by 19,000 shoppers the busiest time of day.

Thus a reasonable design floor area can be derived from: 2,100,000 ÷ 19,000 = 110.5 sq. ft. per person.

We know people will come in different sized groups. It could be assumed that double the average numbers of people use the mall during the busiest three hours of the average day. Optimum mall design floor area accommodates this number of people.

The space required for 57,000 people per day is: (57,000 ÷ 3) x (110.5 to 144sf) = 2.1 to 2.7 million sq. ft.

110.5 sq. ft. = 10.5 foot square area. Adding a 30% safety factor gives us a 12 foot square = 144 sq. ft.

Thus a reasonable design floor area can be derived from: 2,100,000 ÷ 19,000 = 110.5 sq. ft. per person.

The Agora Market: Restaurants

More people go to restaurants more often in cities with warm climates as is shown below:

- Los Angeles (3.8 restaurant visits per week)
- Miami (3.6)
- Las Vegas (3.6)
- Washington, DC (2.8)
- Philadelphia (2.6)

National average is 3.2 times per week.

(from National Restaurant Association's Meal Consumption Behavior — 2000 report)

The typical American age 8 and older consumes an average of 4.2 commercially prepared meals per week, according to Meal Consumption Behavior — 2000, a recent report by the National Restaurant Association.

From February 16, 2005 web issue of restaurant.org a publication of National Restaurant Association

Our restaurants feature a warm décor with booth seats throughout most of the restaurant with size ranging from 5,600-sq. ft. to 7,000 sq. ft. and seating between 200 and 220 guests. (Hops Restaurant Bar & Brewery hopsonline.com)

Minimum = 5,600 ÷ 220 = 25sf/person. Maximum = 7,000 ÷ 200 = 35sf/person.

Average Daily Seat Turnovers

<table>
<thead>
<tr>
<th>US Total/US Independents</th>
<th>US Franchises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-Menu + Table-service</td>
<td>1.3 1.1 2.3</td>
</tr>
<tr>
<td>Limited-Menu + Table-service</td>
<td>1.7 1.0 2.3</td>
</tr>
<tr>
<td>Limited-Menu No Table-service</td>
<td>4.3 3.6 5.1</td>
</tr>
</tbody>
</table>

From National Restaurant Association

Eating out 4.2 times/week ÷ 4.2/7 = 0.60 restaurant trips/day.

Therefore a community of 44,100 people will make 44,100 x .6 ≈ 26,460 restaurant trips/day.

Average Daily Seat Turnover is 1 so 26,460 ÷ 1 = 26,460 seats are needed.

Provide maximum 27sf/seat plus 2/3 more (18sf) for kitchen, etc. Therefore 45sf/seat.

At 45sf/seat, these patrons will need 45 x 26,460 = 1,190,700 square feet of restaurant space.

If a city block is 300 feet square, it contains 90,000 square feet or 2.066 acres.

Thus, the area of restaurant space is 1,190,700 ÷ 90,000 = 14 city blocks.

Accepting 1 Chef per 10 tables and 4 seats per average table, we get 40 seats per chef.
The daily seat occupancy of 26,460 ÷ 40 ≈ 660 chefs.

Allowing 1 server per 4 tables (16 seats) yields 26,460 ÷ 16 = 1,660 servers and (half as many or 830 bus-ers).

Altogether, restaurants in the Agora will employ 660+1660+830 ≈ 3,150 people.

The Agora Stoa: Office Space

Ratios of Agora Design

<table>
<thead>
<tr>
<th>20 Blocks of Agora Single Floor Blocks</th>
<th>17.5 Block of Agora Single Floor Blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>DINING FOR 44,100 people</td>
<td>OFFICE SPACE FOR 36,100 people</td>
</tr>
<tr>
<td>1,440,000 sf = 16 blocks</td>
<td>748 sf/Block</td>
</tr>
<tr>
<td>1,440,000 sf / 1,218sf = 748 blocks</td>
<td></td>
</tr>
<tr>
<td>1,440,000 sf = 748 sf/Block</td>
<td></td>
</tr>
</tbody>
</table>

MARKET FOR 44,100 people at 33,000 sf

1,440,000 sf = 748 sf/Block

A generous 324 sq. ft. per employee produces (38,400 x 324 ÷ 12,441,600 sq. ft.) total office space.

This total office space can be distributed into (12,441,600 ÷ 90,000 sf/block ÷ 144) city blocks.