**INDOOR AIR QUALITY REASSESSMENT**

**Department of Revenue**

**90 Everett Avenue**

**Chelsea, MA**



Prepared by:

Massachusetts Department of Public Health

Bureau of Environmental Health

Indoor Air Quality Program

October 2016

# Background

|  |  |
| --- | --- |
| Building: | Department of Revenue (DOR) |
| Address: | 90 Everett Avenue, Chelsea, MA |
| Assessment Requested by: | Joshua Martin, Deputy Director, Office of Facilities Management, Massachusetts DOR |
| Reason for Request: | Follow-up to September 14, 2016 indoor air quality (IAQ) assessment |
| Date of Assessment: | October 21, 2016 |
| Massachusetts Department of Public Health/Bureau of Environmental Health (MDPH/BEH) Staff Conducting Assessment: | Ruth Alfasso, Environmental Engineer/Inspector, IAQ Program |
| Building Description: | Four-story, flat-roofed building in an office park/mall area. DOR offices occupy the third and fourth floors of this building. The building has several other office tenants.  |
| Building Population: | Approximately 150 employees over the two floors |
| Windows: | Not openable  |

# Methods

Please refer to the IAQ Manual for methods, sampling procedures, and interpretation of results (MDPH, 2015).

Note that this assessment was performed to follow up on the effectiveness of changes to heating, ventilation and air conditioning (HVAC) settings and management that had led to higher than recommended levels of carbon dioxide throughout the office space during a visit conducted on September 14, 2016. Because of this only a limited set of parameters was measured.

# IAQ Testing Results

The following is a summary of indoor air testing results (Table 1).

* ***Carbon dioxide levels*** were below 800 parts per million (ppm) in all areas assessed, indicating adequate fresh air in the space.
* ***Temperature*** was within the recommended range of 70°F to 78°F in all areas assessed.
* ***Relative humidity*** was within the recommended range of 40% to 60% in all areas assessed.
* ***Carbon monoxide*** levels were non-detectable in all indoor areas assessed.

## Ventilation

During the previous assessment, levels of carbon dioxide ranged from 1,476 ppm to 1,716 ppm, which were significantly and consistently elevated over the MDPH recommended level of 800 ppm. At that time, the BEH/IAQ program recommended that the HVAC control settings be checked and modified to bring in more fresh air (MDPH, 2016). In the month since the visit, the landlord’s representative reported that settings had been checked and adjusted. These actions appear to have been successful in reducing the amount of carbon dioxide in the indoor air, as measurements during this visit ranged from 390 to 602 ppm. All other parameters measured were within MDPH guidelines.

# Conclusions/Recommendations

Based on observations at the time of assessment, the issues regarding high carbon dioxide readings and lack of fresh air have been resolved. Please refer to the report on the September 14, 2016 assessment for additional recommendations.

# References

MDPH. 2015. Massachusetts Department of Public Health. Indoor Air Quality Manual: Chapters I-III. Available at: <http://www.mass.gov/eohhs/gov/departments/dph/programs/environmental-health/exposure-topics/iaq/iaq-manual/>.

MDPH. 2016. Indoor Air Quality Assessment, Department of Revenue, 90 Everett Avenue, Chelsea, MA. Massachusetts Department of Public Health, Bureau of Environmental Health, Boston, MA. September, 2016.

| Location | CarbonDioxide(ppm) | Carbon Monoxide(ppm) | Temp(°F) | RelativeHumidity(%) | Occupantsin Room |
| --- | --- | --- | --- | --- | --- |
|
| Background | 361 | 0.5 | 71 | 78 |  |
| 3rd Floor |
| Accenture cubes | 447 | ND | 74 | 55 | 0 |
| Conference 1 | 455 | ND | 74 | 54 | 1 |
| Conference 3-1 left side | 390 | ND | 73 | 57 | 0 |
| Conference 3-1 right side | 407 | ND | 73 | 54 | 0 |
| Conference 3-2 | 460 | ND | 74 | 55 | 0 |
| Kitchen | 464 | ND | 74 | 55 | 0 |
| Reception | 493 | ND | 74 | 58 | 0 |
| Training 3-1 | 440 | ND | 74 | 54 | 0 |
| 004 cubes | 455 | ND | 74 | 54 | 1 |
| 009 cubes | 446 | ND | 74 | 55 | 0 |
| 017 cubes | 451 | ND | 74 | 55 | 0 |
| 019 cubes | 472 | ND | 74 | 55 | 4 |
| 023 cubes | 442 | ND | 74 | 55 | 0 |
| 042 cubes | 447 | ND | 74 | 56 | 1 |
| 050 cubes | 419 | ND | 73 | 56 | 2 |
| 062 cubes | 432 | ND | 73 | 54 | 1 |
| 063 cubes | 441 | ND | 74 | 54 | 1 |
| 066 cubes | 467 | ND | 74 | 54 | 1 |
| 075 cubes | 488 | ND | 74 | 54 | 1 |
| 301 | 447 | ND | 74 | 54 | 0 |
| 302 | 461 | ND | 75 | 54 | 1 |
| 304 | 463 | ND | 74 | 54 | 0 |
| 305 | 467 | ND | 74 | 54 | 0 |
| 307 | 436 | ND | 74 | 55 | 0 |
| 308 | 429 | ND | 74 | 56 | 0 |
| 309 | 429 | ND | 74 | 55 | 0 |
| 310 | 437 | ND | 74 | 55 | 0 |
| 311 | 441 | ND | 74 | 55 | 0 |
| 312 | 505 | ND | 74 | 54 | 0 |
| 313 | 459 | ND | 73 | 54 | 0 |
| 314 | 463 | ND | 74 | 54 | 0 |
| 315 | 440 | ND | 74 | 54 | 0 |
| 4th floor |
| Training/computer | 477 | ND | 73 | 56 | 0 |
| Library | 524 | ND | 75 | 58 | 0 |
| Conference 2 | 422 | ND | 74 | 59 | 0 |
| Conference 3 | 423 | ND | 74 | 57 | 0 |
| 002 cubes | 473 | ND | 73 | 57 | 0 |
| 004 cubes | 462 | ND | 73 | 57 | 0 |
| 010 cubes | 543 | ND | 75 | 56 | 0 |
| 015 cubes | 479 | ND | 73 | 57 | 0 |
| 023 cubes | 541 | ND | 75 | 55 | 2 |
| 027 cubes | 523 | ND | 75 | 55 | 1 |
| 032 cubes | 532 | ND | 75 | 56 | 1 |
| 033 cubes | 527 | ND | 75 | 56 | 0 |
| 038 cubes | 563 | ND | 74 | 56 | 4 |
| 048 cubes | 497 | ND | 74 | 58 | 3 |
| 053 cubes | 451 | ND | 74 | 57 | 0 |
| 054 cubes | 488 | ND | 74 | 57 | 0 |
| 057 cubes | 457 | ND | 74 | 58 | 2 |
| 062 cubes | 464 | ND | 74 | 57 | 2 |
| 068 cubes | 477 | ND | 73 | 57 | 1 |
| 070 cubes | 601 | ND | 74 | 56 | 1 |
| 402 | 479 | ND | 74 | 58 | 0 |
| 403 | 462 | ND | 73 | 58 | 0 |
| 404 | 531 | ND | 74 | 55 | 1 |
| 406 | 485 | ND | 73 | 58 | 0 |
| 407 | 513 | ND | 74 | 56 | 0 |
| 408 | 602 | ND | 74 | 56 | 1 |
| 411 | 524 | ND | 75 | 55 | 1 |
| 412 | 530 | ND | 74 | 55 | 0 |
| 413 | 530 | ND | 75 | 56 | 1 |
| 414 | 506 | ND | 75 | 56 | 0 |
| 415 | 530 | ND | 75 | 56 | 0 |
| 416 | 516 | ND | 75 | 56 | 0 |