



Dectron Inc. 10898 Crabapple Road, Suite 103, Roswell, GA 30075  
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# **Dectron Training for Natatorium Dehumidification Installation and Service Technicians**

**January - June 2015**

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The Dectron Natatorium Installation and Service Technician seminars are held in Roswell, GA. This pamphlet contains agenda, schedules, conditions, instructions, etc.


Parts of this program can be presented locally, at the request of the local Dectron representative. Please contact James Hogan at 1-800-676-2566 X 202 for details.

# Important Information

## Language for Presentation, Testing, and Participation

- Seminars presented at the Dectron offices in Roswell are conducted in English.

## Terms

- To maximize the chance of assignment to the preferred session, be sure that Dectron's **Atlanta**  office receives a check for US\$550 per attendee within 10 business days of Dectron's receipt of the application form(s). The check **must** be sent to



Dectron, Inc., 10898 Crabapple Rd., Suite 103, Roswell, GA 30075.

- Checks sent to Dectron's Montreal office will not be applied to the seminar.
- Seats in the preferred session will not be held without payment.
- Checks are held uncashed in the Dectron (Atlanta) office until after the seminar.
- Dectron will provide seminar materials, coffee, refreshments, and may be able to provide a light lunch (depending on requirements) on the days of the seminar. Attendees are responsible for other food, transportation, lodging, and all other expenses.

## Cancellations and re-assignments

- Until the 45<sup>th</sup> day before the beginning date of the original seminar session, applicant may cancel registration and request check return, or request re-assignment to a different session.
- At any time after the 31<sup>st</sup> day before the beginning date of the seminar session, Dectron may cancel the registration of applicants for whom payment has not been received, unless special arrangements have been made in writing beforehand.
- If Dectron is forced to cancel a session, applicant may request return of check or re-assignment to another session.

## Cautions

- Due to minimum class-size requirements, do not make travel arrangements until receipt of written confirmation from Dectron that the requested session will be held.
- It is impossible to predict when classes will end each day. This is especially true of the last day, when the final exam may take 1.5 to 4 hours, depending on the person. **Please see the notes to the agenda in this brochure regarding airport connections on Fridays.**

## Presence and Attentiveness

Breaks are called for lunch, smoking, restroom visits, cell-phone use, etc. At all other times candidates for the Dectron certificate and/or the NATE CEU's must be present and attentive at their assigned work stations.

Cell phones and pagers must be turned off or stored elsewhere except during breaks. Candidates for the Dectron certificate and/or the NATE CEU's will not have time to conduct other business during the seminar.

## Dectron Technician Certificate

Obtaining a Dectron technician certificate requires the candidate to (a) have adequate experience in installation and/or service of vapor-compression HVAC cooling systems, (b) present a government-issued picture identification, (c) attend the entire program, (d) pass the written and practical tests, and (e) achieve an adequate evaluation of participation.

## North American Technician Excellence

- Dectron seminar A/C (when led by James Hogan) qualifies for 42.5 NATE CEU's. Attendees who wish to qualify for 42.5 NATE CEU's must (a) be able to communicate in English, (b) present their NATE technician identification, (c) present a government-issued picture identification, (d) attend the entire program, and (e) pass the written and practical tests.

## Items To Be Brought by Participants

Each participant should bring

1. a photographic identification card
2. if applicable, a NATE identification card or NATE identification number
3. a small battery-powered non-printing calculator (Note: Cell phones should remain off.)
4. a 12-inch straightedge
5. any corrective lenses (Note: For close work, some people may benefit from a magnifying glass.)

**Dectron Seminar AC Registration Form** (See included Acrobat form, which can be filled out directly.)

(Seats are assigned upon receipt of payment and this completed form at the Dectron office shown below.)

Name \_\_\_\_\_ NATE I.D. Number (if applicable) \_\_\_\_\_

Company \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ State/Province \_\_\_\_\_ Zip/Postal Code \_\_\_\_\_ Country \_\_\_\_\_

Ph. ( ) \_\_\_\_\_ - \_\_\_\_\_ Fax ( ) \_\_\_\_\_ - \_\_\_\_\_ e-mail \_\_\_\_\_

Your Dectron representative \_\_\_\_\_

1. Rank several of the following seminar dates in 2015 for your preference, with "1" being your first choice. USE NUMBERS! DO NOT USE OTHER MARKS!

January 12, 13, 14, 15, 16	<input type="checkbox"/>	February 9, 10, 11, 12, 13	<input type="checkbox"/>	March 16, 17, 18, 19, 20	<input type="checkbox"/>
April 20, 21, 22, 23, 24	<input type="checkbox"/>	May 11, 12, 13, 14, 15	<input type="checkbox"/>	None	<input type="checkbox"/>

2. Did you use numbers to rank your choices in question #1, above?

Yes.  No.  TRY AGAIN.

3. Check the types of work your company does.

<input type="checkbox"/> refrigeration	<input type="checkbox"/> plumbing	<input type="checkbox"/> air distribution	<input type="checkbox"/> engineering / architecture
<input type="checkbox"/> controls	<input type="checkbox"/> electric power	<input type="checkbox"/> sales	

4. Check the types of work you personally do.

<input type="checkbox"/> installation	<input type="checkbox"/> service	<input type="checkbox"/> maintenance	<input type="checkbox"/> engineering
<input type="checkbox"/> architecture	<input type="checkbox"/> management	<input type="checkbox"/> sales	

5. Check the types of work you personally do.

<input type="checkbox"/> refrigeration	<input type="checkbox"/> plumbing	<input type="checkbox"/> air distribution	<input type="checkbox"/> controls	<input type="checkbox"/> power
<input type="checkbox"/> DS/RS/RB/DA5/RA5/RB5 sizes 010-080 (hotels, motels, residential, small commercial)				
<input type="checkbox"/> DS/RS/RB/DA5/RA5/RB5 sizes 100 and larger (YMCA's, recreation centers, large commercial)				

6. How long have you worked with (a) DX cooling equipment  (years), and (b) Dectron equipment  (years) ?

7. Are you able and willing to work approximately 12 hours/day during the seminar? YES  NO

8. Are you a licensed refrigerant technician under EPA 608(U.S.A.), Environment Canada, or other?  YES  NO

9. Do you have access to a micron-level vacuum gauge?  YES  NO

10. Dectron may be able to provide a light lunch during the class, depending on requirements. List any special dietary requirements or allergies on a separate page. Include that page with your registration form. Kosher, halal, ahimsa, etc., constitute "special dietary requirements". Check the box at right if you have **no special requirements**.

11. List any special physical or mental requirements on a separate page. Include that page with your registration form. Check the box at right if you have **no special requirements**.

12. To reserve a seat temporarily, mail, fax, or e-mail this completed form to James Hogan, Dectron, Fax: 770-649-0243, e-mail: jhogan@dectron.com. Telephoned reservations are not accepted. You will receive a seat on the earliest date available, subject to your preferences stated in question 1. See Terms, p.2.

13. To complete your reservation, send a check for US\$550 per seat, payable to Dectron Inc., along with a copy of this completed form, to

Dectron Inc., 10898 Crabapple Rd., Suite 103, Roswell, GA 30075, attn. James Hogan

Registration may be cancelled if payment is not received **at least 31 days** before the seminar date.

**NOTE: Do not send payment to Dectron Canada, or include payment in other payments.**

14. Did you send payment to Dectron USA?  YES  NO

YES     NO  
 ↓  
 Done.  
 Send application.

TRY AGAIN.

# Day 1 (Subject to change without notice.)

8:00 AM

Preliminary evaluation quiz

The system

Building - Pool - Dehumidifier - People

Basics of Psychrometry

psychrometric chart, sling psychrometer

dew point is the problem, dew point is the answer

reading vapor pressures

comfort zones

exercises, practical airflow problem

dehumidifier operating modes illustrated by psychrometric chart, airstream mixing, bypassing

Evaporation

ASHRAE calculation

practical problem

Dehumidifier Operation

operating modes illustrated by controller logical flowcharts, Service Manual sec. 2

review of operating modes illustrated by psychrometric chart

operating modes illustrated by airflow diagrams

effect of construction dusts on refrigeration system, warranty considerations

refrigerant-oil mutual miscibilities

effect on compressor, corrections, warranty considerations

valve operations in cross-sections

failure modes, corrections

safety-device settings and operation

operating modes illustrated by refrigeration-piping diagrams, flow animations, Service Manual sec. 3

special requirements, special oil-return issues, special service considerations

variable reheat

Wiring

swarf

MAM electromechanical controls, HT800 I/O board

signals and connections

sensors and switches

transformers, overloads,

supplemental controls

unit wiring diagrams, special considerations, service

special wire-size requirements

HT800 controller

connections

interface operation

special display mode

alarm codes

emergency operation

controller software field configuration

example of diagnostic method, troubleshooting

Dismissal time cannot be known in advance, but is estimated at 5:30 PM.

Homework

reading assignment (material appears on tests) - MAM OM, DS HT800 OM, DA5 HT800 OM

written assignment (approximately two hours, graded)

## Day 2 (Subject to change without notice.)

8:00 AM

Homework Review

Questions, answers, and discussions

Piping

- refrigerant

  - general requirements

  - special requirements, routing, relief-valve piping

  - nameplate specifications, air-cooled condenser tubes, subcool, consequences, corrections

  - brazing, brazing is not welding, scale, consequences, corrections

  - evacuation, diverting-valve states, access-valve locations, vapor pressures,

- cooling water

- condensate

- pool water

- overview

Air Filters

- particle sizes, filtration methods, consequences and lowest cost of ownership

Energy Recovery

- pool-water heat recovery, financial consequences, corrections, lowest cost of ownership

Building Construction

- clearances and supports

- air distribution

  - duct and diffuser locations, Coanda effect, fabric duct, room airflow patterns

- ventilation, consequences, warranty considerations

- irreversible coil fouling, consequences, service, warranty considerations

- pressurization levels in different building spaces

- recommended chemical-storage facility, consequences, warranty considerations

- duct construction near air handler

  - von Karman vortices in ducts, system effect, AMCA 201, SMACNA

  - von Karman vortices around structures

- vapor retarders

  - review of dew point, unexpected condensation, water damage, ice damage, mold

- chemical storage

Start-up procedure

- airflows, water flows, pressure switches, flow switches, thermostats, clocks

- pre-start checklist

- special adjustments

- required start-up report and warranty-registration forms

- start-up practical

Hall of Shame (a detective game based on photographs, participation is evaluated)

Dismissal time cannot be known in advance, but is estimated at 5:30 PM.

Homework

- reading assignment (material appears on tests) - MAM OM, DS HT800 OM, DA5 HT800 OM

- written assignment (approximately two hours, graded)

## Day 3 (This is subject to change without notice.)

8:00 AM

Review of Homework

Questions, answers, and discussions

Written test, cumulative to present

Air filters

Operation, maintenance, consequences, warranty considerations

Combustion Devices

boilers and furnaces

elevation effects, wet time, halogen atmospheres, special considerations

Pool-Water Chemistry

methods, exposures, consequences, corrections, warranty considerations

Electric Power Quality

voltage ranges

voltage and current imbalances

consequences, corrections

Internal Airflows

standard

Economizer

Purge

EconoPurge

SmartSaver

heat pipe operation, glycol operation

Intelligent Energy Saver

EconoSaver

Refrigeration for Multiple-Circuit Units

review of valve operation

review of refrigerant-oil miscibilities

diagrams for multiple-circuit units

Note: Dismissal time cannot be known in advance, but is estimated at 5:30 PM.

Homework

reading assignment (appears on tests) - DA5 DOTICS OM, DS DOTICS OM, DA5 SPVR OM, DS SPVR OM

written assignment (approximately two hours, graded)

## Day 4 (This is subject to change without notice.)

8:00 AM

Review of Homework

Questions, answers, and discussions

Wiring for Multiple-Circuit Units

- sensors and switches
- supplemental controls
  - review of voltage and current imbalance
- diagrams for units with multiple circuits
  - special considerations
  - part-winding start, Y- $\Delta$  start

DOTICS-9 Controllers

- connections
- power and battery
- software loading
- software register organization
- OP-393 interface
- software register functions,
  - control-register field modifications, exercises
  - monitor register functions, exercises
- text messages, interpretations, corrections
- operating bands
- diagnostics
- OP-7 interface
- TTY communication

Supervisaire Controllers

- connections
  - special wiring considerations
    - RS-485 characteristic impedance of cables and splices
  - building-management systems
    - Ethernet & RS-485 characteristic impedance of cables and splices
- PGD interface
  - user interface map
  - service interface map
- PCOT interface
  - user interface map
  - service interface map
- alarms
- diagnostics

Practicals

- startup of DS Supervisaire, DA5 HT800
- DS HT800 configuration exercise
- DOTICS-9 and Supervisaire troubleshooting exercises

Note: Dismissal time cannot be known in advance, but is estimated at 6:30 PM.

Homework

- reading assignments (appear on tests) - DA5 DOTICS OM, DS DOTICS OM, DA5 SPVR OM, DS SPVR OM, MAM OM, DS HT800 OM, DA5 HT800 OM
- written assignment (approximately two hours, graded)

## Day 5 (This is subject to change without notice.)

8:00 AM

Review of Homework

Questions, answers, and discussions

Completion of any unfinished assignments

Hall of Shame (a detective game based on photographs, participation is evaluated)

Written test, cumulative to present

The time required varies by person, and is usually between 1.5 and 4 hours.

**NOTE:** Dectron reserves the right to end the test period unilaterally after 10 hours.

**NOTE:** Participants are free to leave after submitting all assignments, including the written tests. The estimated time of departure is between 3:00 PM and 6:00 PM.

**NOTE:** Test results and certificates will be mailed to the participants. Grading, evaluations, data entry, reporting, letter composition, printing, and delivery to the post office usually takes fifteen business days. Other work may cause a short additional delay.

Dectron recommends that participants not attempt to fly out on Friday evening, due to unpredictable test completion, traffic, and airport security.

The following notes are for convenience only, no recommendation or warranty for any purpose is expressed or implied.

**NOTE:** Participants who take the train to the airport should allow for **at least**

1. Dectron to train station - 30 minutes
2. wait at train station - 20 minutes
3. trip to airport station - 60 minutes

**NOTE:** Participants who drive to the airport should be aware that Atlanta traffic grows increasingly heavy between 2:00 PM and 7:30 PM on Fridays. The times from Dectron to the airport vary unpredictably from 35 minutes to several hours.

**NOTE:** The Atlanta airport website is [www.atlanta-airport.com](http://www.atlanta-airport.com).

Assuming normal conditions, participants who fly from the Atlanta airport should allow for **at least**

1. moving from the airport doors through ticketing to security - 15 minutes
2. security inspection (varies wildly) - 15 to 45 minutes
3. security to concourse -

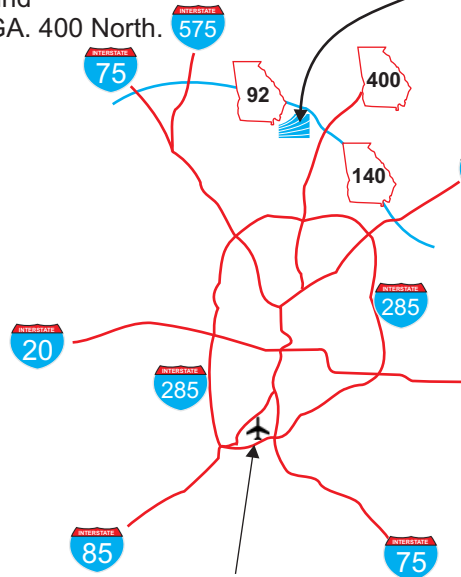
Concourse T	1 minute
Concourse A (by train)	3 minutes
Concourse B (by train)	5 minutes
Concourse C (by train)	6 minutes
Concourse D (by train)	7 minutes
Concourse E (by train)	9 minutes
4. Concourse train station (except Concourse T) to gate 6 minutes



# Transportation

**Dectron, Inc.**  
**10898 Crabapple Rd.**  
**Suite 103**  
**Roswell, GA 30075**  
**770-649-0102**

From I-75 southbound  
 take I-285 East to GA. 400 North.



From I-85 southbound  
 take I-285 West to GA. 400 North.

From I-20 eastbound  
 take I-285 North to GA. 400 North.

From I-20 westbound  
 take I-285 North to GA. 400 North.

From I-85 northbound  
 take GA. 400 North.

From Atlanta Airport  
 take I-85 north to  
 GA. 400 North.

From I-75 northbound  
 take I-85 East to GA 400 North.

**For public transportation, see next page.**

## **Driving Directions (Also see above for directions for each route.):**

**Note:** For convenience only, no recommendation or warranty for any purpose is expressed or implied.

**Note:** Things change. Independently confirm all information in advance.

1. From I-285 intersection with GA-400, go north on GA-400 for 7.8 miles.
2. Take Exit 7B to Holcomb Bridge Road (GA-140) West.
3. Go west on Holcomb Bridge Road (GA-140) 1.9 miles to its end at Alpharetta Hwy. (GA-9).
4. Continue going west. Holcomb Bridge Road (GA-140) becomes Crossville Road (GA-92) at Alpharetta Hwy.
5. Go west (sign says "SOUTH") on Crossville Road (GA-92) 1.3 miles.
6. Turn left on Crabapple Road.
7. Go 0.2 mile, past the bank on the right.
8. Crabapple Office Park West is the next right.
9. Dectron is in the second building on the right after you turn into the office park. The sign in front says "10898" and "Dectron".
10. Enter front door. The training room is the first door on the LEFT.



# Transportation

## From airport via public transportation:

**Note:** For convenience only, no recommendation or warranty for any purpose is expressed or implied.

**Note:** Dectron, Inc. has no interest in any of the businesses listed.

**Note:** Persons taking public transportation may wish to consider hotels with shuttle service.

**Note:** Things change. Independently confirm all information in advance.

1. Go to MARTA ([www.itsmarta.com](http://www.itsmarta.com)) station at west end of airport main terminal building (near baggage claim).
2. Take Red Line train north to North Springs station.
3. To hotel -
  - a. arrange hotel shuttle service, or
  - b. arrange taxi service (Note: Taxi service may require stopping at Dunwoody station.), or
  - b. take MARTA bus 185 to stop 902962 Holcomb Bridge Rd. at Dogwood Rd., walk southeast to Doubletree Hotel or north to La Quinta Hotel, or
  - c. take MARTA bus 185 to stop 902791 Holcomb Bridge Rd. at Warsaw Rd., walk southeast to Holiday Inn, or
  - d. take MARTA bus 140 to stop 903120 Mansell Rd. Park and Ride, walk west on Mansell Rd. 0.8 miles to Wingate Hotel or Hampton Inn.
4. To Dectron -

Other than taxis, there is no public transportation with a stop near Dectron.

## Taxi Services:

**Note:** This list is for Roswell taxi services only. Other taxi services are available at the airport.

**Note:** Partial list only. Other businesses may be preferable.

**Note:** For convenience only, no recommendation or warranty for any purpose is expressed or implied.

**Note:** Dectron, Inc. has no interest in any of the businesses listed.

**Note:** Things change. Independently confirm all information in advance.

1. Yellow Cab Co.  
442 S Atlanta St  
Roswell, GA 30075  
678-745-5531

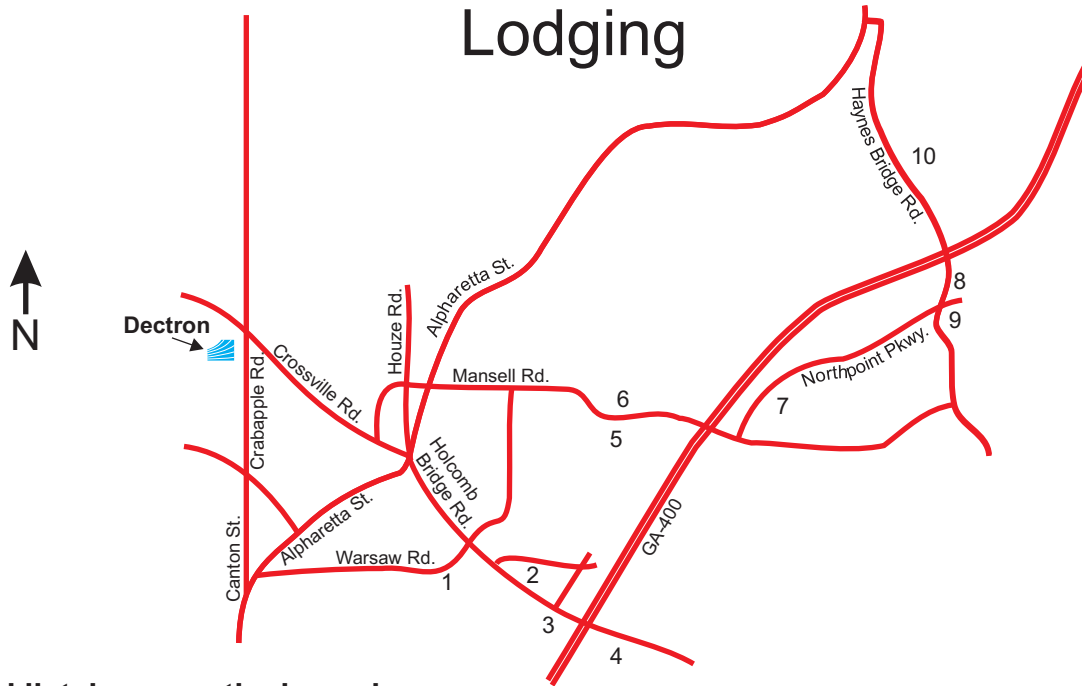
2. A Morelia Taxi  
112 Norcross St Roswell, GA 30075  
770-552-3390

3. North Point Safety Cab  
Roswell, GA 30075  
770-992-9111

4. A America's Taxi  
Roswell, GA 30075  
678-461-8294

destination -  
**Dectron, Inc.**  
**10898 Crabapple Rd.**  
**Suite 103**  
**Roswell, GA 30075**  
**770-649-0102**  
See Driving Directions, previous page.

# Lodging



**Partial list, in no particular order.**

**Note:** Dectron, Inc. has no interest in any of the businesses listed.

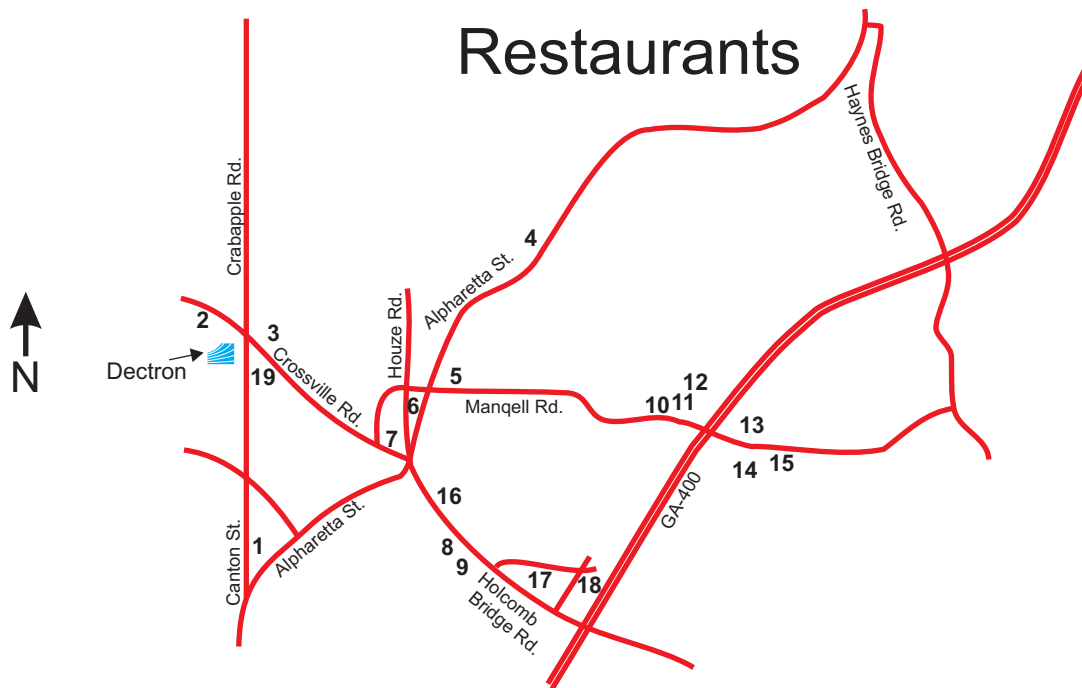
**Note:** This is a partial list only. Other businesses may be preferable.

**Note:** Arrangement is by approximate distance from Dectron.

**Note:** For convenience only, no recommendation or warranty for any purpose is expressed or implied.

**Note:** Things change. Independently confirm all information in advance.

- |   |   |  |
|---|---|--|
| <p>1. Holiday Inn Roswell<br/>909 Holcomb Bridge Rd<br/>Roswell, GA 30076<br/>800-345-8082<br/>local shuttle</p>                          | <p>5. Wingate Hotel<br/>1005 Kingswood Pl<br/>Alpharetta, GA 30009<br/>770-649-0955<br/>local shuttle (8:00-5:00)</p> | <p>8. Embassy Suites<br/>5955 N Point Pkwy<br/>Alpharetta, GA 30022<br/>678-566-8800<br/>local shuttle (7:30-10:00)</p>        |
| <p>2. La Quinta Inn and Suites<br/>575 Old Holcomb Bridge Rd<br/>Roswell, GA 30076<br/>866-670-5933<br/>770-552-0200</p>                  | <p>6. Hampton Inn<br/>10740 Westside Way<br/>Alpharetta, GA 30009<br/>770-640-5511<br/>local shuttle (8:00-5:00)</p>  | <p>9. Hilton Garden Inn Atlanta Northpoint<br/>10975 Georgia Lane<br/>Alpharetta, GA 30022<br/>678-566-3900</p>                |
| <p>3. Doubletree Hotel<br/>1075 Holcomb Bridge Rd<br/>Roswell, GA 30076<br/>877-207-1233<br/>770-992-9600<br/>local and MARTA shuttle</p> | <p>7. Hyatt Place<br/>7500 N Point Pkwy<br/>Alpharetta, GA 30022<br/>770-594-8788<br/>local shuttle (7:30-10:30)</p>  | <p>10. Towneplace Suites<br/>7925 Westside Pkwy<br/>Alpharetta, GA 30009<br/>770-664-1300<br/>local shuttle (7-9AM, 5-7PM)</p> |
| <p>4. Courtyard by Marriott<br/>1500 Market Blvd<br/>Roswell, GA 30076<br/>770-992-7200</p>   |   |  |



**Partial list, in no particular order.**

**Note:** Dectron, Inc. has no interest in any of the businesses listed.

**Note:** This is a partial list only. Other businesses may be preferable.

**Note:** For convenience only, no recommendation or warranty for any purpose is expressed or implied.

**Note:** Things change. Independently confirm all information in advance.

- |   |   |  |
|---|---|--|
| 1. Fickle Pickle<br>1085 Canton St.<br>Roswell, GA 30075<br>770-650-9838            | 7. Stoney River<br>10524 Alpharetta Highway<br>Roswell, GA 30076<br>678-461-7900  | 13. P.F. Chang's<br>7925 N Point Pkwy<br>Alpharetta, GA 30022<br>770-992-3070                    |
| 2. Bistro VG<br>70 W Crossville Rd<br>Roswell, GA 30075<br>770-993-1156             | 8. Olive Garden<br>905 Holcomb Bridge Rd<br>Roswell, GA 30076<br>770-642-0395     | 14. Benihana<br>2365 Mansell Rd.<br>Alpharetta, GA 30022<br>678-461-8440                         |
| 3. Slope's Barbeque<br>34 Crossville Road<br>Roswell, Georgia 30075<br>770-518-7000 | 9. Peachtree Diner<br>915 Holcomb Bridge Rd.<br>Roswell, GA 30076<br>770-993-0299 | 15. The Diner at Northpoint<br>2355 Mansell Rd.<br>Alpharetta, GA 30022<br>770-650-6400          |
| 4. El Porton<br>11190 Alpharetta Hwy<br>Roswell, GA 30076<br>678-393-0100           | 10. Ray's Killer Creek<br>1700 Mansell Rd<br>Alpharetta, GA 30009<br>770-649-0064 | 16. India Chef<br>720 Holcomb Bridge Road<br>Roswell, GA 30076<br>770-817-0661                   |
| 5. Longhorn Steakhouse<br>900 Mansell Road<br>Roswell, GA 30076<br>770-642-8588     | 11. On the Border<br>10575 Davis Dr<br>Alpharetta, GA 30004<br>770-998-3335       | 17. Red Lobster<br>1050 Holcomb Bridge Rd<br>Roswell, GA 30076<br>770-998-8573                   |
| 6. IHOP<br>10686 Alpharetta Highway<br>Roswell, GA 30076-1427<br>770-552 1323       | 12. Pappadeaux<br>10795 Davis Dr<br>Alpharetta, GA 30009<br>770-992-5566          | 19. Karachi Broast and Grille (Halal)<br>10971 Crabapple Rd<br>Roswell, GA 30075<br>770-643-9553 |