

THE 3D HOUSE THAT AUTOCAD BUILT



**Autodesk Premier
Training Center**



A Real Life Story
by Elton K. Hammond P.Eng.

Design of The EKHO Institute

- Jan. - Mar. 1990 - Designed on AutoCAD 3D Release 10 by Elton Hammond
- Built with Argisol exterior walls (styrofoam filled with concrete)
- April 1990 - Excavation started
- Project managed by Elton Hammond
- August 1990 - moved in and taught first AutoCAD class
- July - Oct. 1994 - Recreational facilities designed with R12 3D by Elton Hammond.

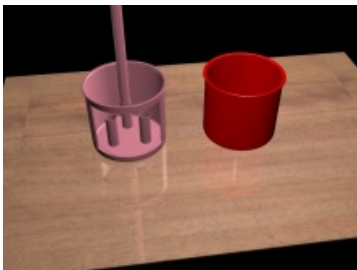


Interior View of Gazebo
Designed in 3D AutoCAD 12 by Elton Hammond
Rendered in 3D Studio R4 by Mel Boyle

Why Use 3D?

Some good reasons for utilizing 3D Design instead of traditional 2D Design tools.

1. Quality Control - allows full checking of all aspects.
2. Visualization superior to cardboard models.
3. Multiple correct views result from one model.
4. Rendering gives photographic quality images.
5. Animation gives users a full view of the project.
6. More clearly understood by lay people.
7. More inspirational images than simple 2D Technical drawings.
8. Motivates and inspires designers to be more creative.
9. Provides non-technical customers with better information.



Prototype too expensive
to Build?



Some Statistics:

- 675,000 lbs. of concrete used in 1990 in the Swiss-designed Argisol Block walls of EKHO Manor.
- EKHO Manor is heated by a 6 ton water source heat pump without any backup heat required in a normal winter.
- First 2 storey house in North America with Argisol
- Photograph of EKHO Manor was/is used on the front cover of Argisol marketing brochure
- AAB Green blocks was a Canadian version of Argisol that:
 - was started in Cobourg, Ontario in 1993 by Hank Mensen, a carpenter who had immigrated from Holland and has now “retired” to Barcelona, Spain to build a beach front home.
 - was initially designed by EKH for Hank Mensen in 3D Solid Modeling with AutoCAD R12.
 - resulted in a \$100 million dollar contract with Japan during AAB’s first year in business!!
 - AAB now has manufacturing facilities all over the world including several in Japan and Europe.



Night View of EKHO Manor’s Gazebo designed with 3D AutoCAD R12. Photograph taken Oct. 31/98 with Kodak DC260 Digital Camera.

Some EKHO Institute Statistics:

- The EKHO Institute was started in January 1990
- became an Autodesk Training Center in 1991
- played host to summer conference for Canadian ATCs in August 1995.
- EKHO Manor was initially designed with the EKHO Institute attached to be able to teach 6 AutoCAD students at a time.
- Success over the years has resulted in growth to 2 classrooms for up to 18 students at a time.
- 3D Studio Classes were started in 1993 using Pia Zimperi as our instructor
- 13 awards received for training excellence over the years.
- Recreation Facilities designed with 3D ACAD and built in 1994.



Aerial photo of The EKHO Institute
taken by EKH in June 1997.

Resources at EKHO

Video tapes, AutoCAD Level 1, 3D Studio

Internet Access

Magazines - Cadence, Cadalyst

Books, Video tapes, CDs

Instructors, Fellow students

HP Scanjet 6100C - 8-1/2"x14" flatbed

Yamaha 4X CD Recorder

Kodak DC260 Digital Camera

Printers:

- HP 5000 Laserjet (1200dpi)
- HP4 Laser (600 dpi)
- HP 1120C Color printer 600 dpi (13"x19")
- Epson Stylus Pro XL Color 720dpi (13"x19")

Windows NT 4.0 Servers

Windows NT 4.0 Workstations



Classroom number 1

Facilities:

2 Lunch rooms with full kitchen facilities

- Downstairs
- Gazebo (April to October)

3 Washrooms, Front entry, Downstairs entry, Poolhouse

Tennis court, Heated pool, Patio

Badminton, Volleyball

Robotel video network in each classroom

TV/VCR for both classrooms

Bose Acoustimass sound system in each classroom

Whiteboard in each classroom

Stereo receiver in each classroom

Pentium III's with 128 Mb RAM & 19" monitors

100 Mb/sec Ethernet network cabling

Ergonomic Steelcase chairs and desks



Summer Facilities for out of town guests



3D AutoCAD Gazebo Project by
EKHO Students
Rendering in 3D Studio Max by
Mel Boyle - EKHO graduate.

The above image is an example of an architectural project created during the last day of a 4 day course, by some of our 3D AutoCAD students and then touched up with 3D Studio Max by one of our former students.

INSTRUCTIONS TO THE EKHO INSTITUTE.

NOTE:

THE EKHO INSTITUTE is located 5 minutes south of Ottawa Airport.

- (1) Take regional road 8 east from Manotick OR
- (2) Take Albion road (from Bank Street, south of downtown Ottawa) OR
- (3) Take Bovesville Rd. SOUTH (3) Take Bovesville Rd. from Airport Parkway (Alert Rd.) (3) Take Bovesville Rd. OR
- (4) Take Limebank Road off Riverside drive (south of Hunt Club Bridge).

Temporary road

Temporarily closed

Approx. 1 mile

Regional road 8

EMERALD LINKS GOLF COURSE

6302 EMERALD LINKS DRIVE

TRAILER PARK

Regional Rd 25

Old Prescott Rd

Albion Road

Hwy 31 (Bank St.)

To Ottawa

Bovesville Rd. To Ottawa Airport

Limebank Road to Ottawa Airport

To Manotick

ST MARK'S CATHOLIC HIGH SCHOOL



ST MARK'S SCHOOL

DISKERS



EKO ENGINEERING SERVICES INC.

Map to the Ekho Institute

DWG TITLE

Map to THE EKHO INSTITUTE

CLIENT THE EKHO INSTITUTE

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SCALE: 1" = 1/2"

PROJECT: 000001

DESIGNED BY: ENR

CHECKED BY: ENR

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THE EKHO INSTITUTE address:

6302 EMERALD LINKS DRIVE

Greely (Ottawa) Ontario

K0A 1Z0

Tel: (613) 822-6935

Fax: (613) 822-7132

THE EKHO INST FLUTE
is an Autodesk authorized
Autocad TRAINING CENTER

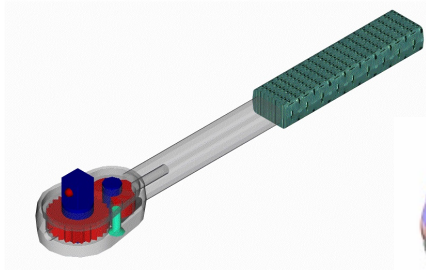
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MAP2

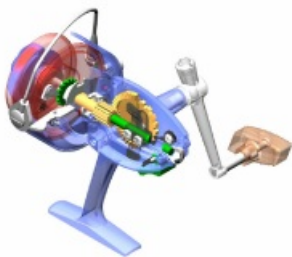
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3D Courses offered at EKHO Institute

AutoCAD 3D	(4 days)	\$1400
Deluxe 3D AutoCAD	(22 days)	\$4500
Mechanical Desktop	(5 days)	\$1595
3D Studio VIZ	(5 days)	\$1595
3D Studio Max 1	(5 days)	\$1695
3D Studio Max 2	(5 days)	\$1695
3D Studio Max Deluxe	(25 days)	\$ 5100



Wrench by EKHO Student
Norman Vaillancourt with
R14



Fishing Reel by Paul
Fichera with AutoCAD R14