Software

ASP Submittal Program

Allied Air Enterprises Inc. has made submitting specifications to engineers, architects, and contractors simple with the new Allied Submittal Program (ASP) available on CD-ROM. No longer will you have to manually highlight specification sheets and calculate total and sensible capacities. The ASP program will do this and more, enhancing your opportunities while saving you valuable time.

This easy to use software features:

- Professional and organized submittal
- On screen calculations based on desired design inputs
- Product features
- Unit performance - cooling, heating and blower
- Electrical data
- Unit dimensions and weight
- Unit drawings
- Accessory Options with descriptions and drawings
- Selection Process
- Order List

In addition to these great features, Allied Air Enterprises Inc. will provide quarterly product updates on our web page to allow you to download changes and additions to our product line for the current calender year.

Allied Submittal Program (ASP) - System Requirements

- Windows 95, 98, ME, NT 4.0 or 2000
- Minimum of 16 MB of RAM required, but 32 MB is preferred
- 20 MB of hard-disk space required
- CD-ROM drive
- Printer

ASP Submittal Program Order Form

ASP Order Form				
Part Number	**Description**	**Price**	**Qty.**	**Total**
ASUB-CD	Complete Submittal Program CD-ROM*	$15.00		

* Includes quarterly on-line updates for the remainder of the current calender year

DEALERS: This order must be sent to your distributor.
Do not send to Allied Air Enterprises.

DISTRIBUTOR: Please order materials on the fulfillment site at www.alliedair.net.

Elite Software

Allied Air Enterprises Inc. has teamed up with the leader in HVAC-oriented software Elite Software Inc. to offer a complete assortment of industry-related software to its distributors and their dealers.

Deciding which software to buy is relatively easy. The two most popular programs are RHVAC and AUDIT. The RHVAC (Residential/Light Commercial load calculations) program is Elite Software's best selling program to HVAC contractors. Their AUDIT (Operating Cost and Equipment Selection) program is their next best seller.

HVAC Tools is another program that is also very popular with the HVAC industry. HVAC Tools software offers thirteen different functions, including wire sizing, equipment data interpolation, psychometries, fan analysis, U-Factor calculations, pipe sizing, duct sizing, and more.

Several other Elite Software programs are available, including QUICK QUOTE (Automated Sales Proposals) and Gas Vent (for sizing gas vents).

Allied chose Elite Software because they offer products that can help Allied distributors and their dealers to succeed. No matter which software you choose, you can rest assured of the value you'll receive by getting a top quality program at a good price.

RHVAC for Windows

RHVAC for Windows is the easiest and fastest way of calculating 7th Edition of Manual J Load Calculations. It's as easy as point and click; most of the information is already there.

Features of RHVAC for Windows

General Features:

- Title page can now have your company logo scanned in for display and printed on reports
- Autoload (the main template) can be "saved as" unlimited templates

General Project Data:

- Report title can be listed as well as any comments
- Customer information can be listed on reports and prints on title page
- Weather data can be searched for, created, and changed to your customer's hometown

Default Information:

- Standard construction types are selected for the structure in Autoload - "Save as" to change

Room Data:

- Calculate Block Load calculations in minutes
- Calculate Room by Room Load calculations with CFM per room and Run Out Sizes
- Calculate up to 15 systems per project and 10 zones per system and 999 rooms
- Calculate zoning CFM per Manual J calculations
- Calculate Trunk sizes and Run Out sizes per number of registers in each room
- Select equipment by Total Loads or Percentage of Sensible to Total Loads
- Graph Load calculation in pie charts
- Standard Construction Types can be stored and inserted by pressing one key (F5) in room data
- Re-calculate Loads for new insulation, choose new Manual J Code with one key (F7)
- Building can be rotated and Load calculations can be re-calculated with one key (F8)

Print Options:

- Title page generation with your company logo
- Choose options - Print Total Loads, System, Zone and Room by Room Loads, CFM per Room, and Duct size
- Convert information to Fla-Res Program automatically
- Prints in color 840 dots per inch
- Display and print all reports and graphs in either black and white or color
- Compatible with all types of printers

Hardware Requirements:

CD-ROM Drive
Windows 95, 98, or NT; 486 processor; 16 Meg RAM

AUDIT for Windows

The Windows version of AUDIT is the best way to calculating operating costs between any type of heating and cooling systems, lighting, appliances, and hot water. It's an incredibly easy and fast program to operate. Once you set up a TEMPLATE file, an energy analysis can be performed and printed in just minutes!

Features of AUDIT for Windows

General Features:

- Banner Screen can have your company logo scanned in for display and/or printed on reports
- Files can be stored in "cook book" fashion, enabling you to easily make changes and print
- Auto-Save feature ensures you will not lose information

General Project Data:

- Report title can be listed as well as any comments
- Contractor information can be listed on reports
- City reference information can be searched for and stored

Utility Rates:

- Store up to six different fuel rate sets for either different utilities or different types of rates
- Allows either simple rates or complex rates for electric or gas rate blocks and demand charges
- Rates can be assigned to certain months of the year for summer and winter charges
- Libraries can be set up to store unlimited amounts of rate sets

Appliances:

- All home appliances can be set up to determine base loads for utility costs
- Lighting costs for indoor and outdoor lighting can be calculated by watts per square foot
- Appliance loads for TV's, dishwashers, VCR's, etc. can be calculated
- Cooking range and clothes dryer can be calculated with the use of either electric, natural gas, or propane
- Hot water heater cost can be calculated with the use of heat pump heaters, desuperheaters, or fully integrated heat pumps
- Access the GAMA Directory to search all hot water heaters and list them
- Calculate the size of hot water heater needs based on usage

This function of the program is handy when working with builders comparing different fuel types and complex rate structures.

HVAC System Data:

- Examine any type of HVAC system on the market: Air Conditioners, Heat Pumps, Variable Speed Heat Pumps, Closed or Open Loop Ground Source Heat Pumps, Gas-Fired Air Conditioners & Heat Pumps, Gas Furnaces, Propane Furnaces, Oil Furnaces, Gas & Oil Boilers, and Duel Fuel systems
- Calculate electric cost of fan operation in either intermittent or continuous operation
- Show savings of commercial units using single or differential economizers

- Calculate cost of operation of up to six different systems at a time, with the ability to use different utility rates and different appliance sets for each system
- Have the ability to combine systems into groups of systems for comparison purposes
- Access the ARI or GAMA directories for up-to-date information on any manufacturer or system type
- Search for equipment by model number, capacity range, efficiency range, or manufacturer
- Graphing capabilities: capacity vs. load, fuel usage, total energy usage, appliance cost, graph up to six systems at a time

Comparisons:

- Compare any two systems or groups of systems, showing cost of operation of each system and savings in year 1, 2, 3, 4, 5, 10, and 15
- Compare Cooling cost, Heating cost, Appliance cost ,and Hot Water cost either separately or all together
- Use bar graphs to show the cost of operations of all costs side by side
- Use line graphs to show savings incurred over a period of years
- Use sound graphs to show the dB level of any unit listed in ARI directory (with a sound card, you can actually "play" the sound level through your PC)
- Videos can be converted and played through your PC

Investment Analysis:

- Perform Investment Analysis between any system showing payback period in years and show return on investment by percentage
- Perform Loan Analysis for any month period (i.e., 12, 24, 36, 60, 180, 360 months) and show monthly savings compared to additional monthly cost
- Perform Lease Analysis for commercial customers showing energy savings and maintenance savings compared to monthly lease payments

Weather Data:

- Uses Monthly Bin analysis rather than Yearly Bin analysis to provide more accurate cost of operation and to calculate monthly bill statements

Print Options:

- Automatic title page generation with your company logo
- Print monthly cost of operation broken down by Heating, Cooling, Appliance and Water Heater cost
- Print in color up to 720 dots per inch
- Display and print all reports and graphs in either black and white or color
- Compatible with all types of printers

Hardware Requirements:

CD-ROM Drive
Windows 95, 98, or NT; 486 processor; 16 Meg RAM

Allied Advantage Software by Elite Software
Order Form

ALLIED Air Enterprises

Windows Based Programs

RESIDENTIAL

Quantity	Description	Suggested Price	Distributor Cost
	RHVAC* - **Residential HVAC "Manual J" Loads**	**$495.00**	**$300.00**
	AUDIT (With Appliances)* - **Residential Energy Analysis**	**$595.00**	**$350.00**
	AUDIT (No Appliances) - Residential Energy Analysis	$495.00	$300.00
	HVAC Tools - Collection of HVAC Utilities	$249.00	$175.00
	Proposal Maker - Professional Sales Proposals	$295.00	$195.00
	Gas Vent - Gas Vent Sizing	$195.00	$150.00
	Drawing Board - Simple Drawing Plan	$495.00	$300.00

COMMERCIAL

Quantity	Description	Suggested Price	Distributor Cost
	CHVAC - (2 Zone Capacity) Residential HVAC "ASHRAE" Loads	$295.00	$195.00
	CHVAC - (10 Zone Capacity) Residential HVAC "ASHRAE" Loads	$395.00	$250.00
	CHVAC - (50 Zone Capacity) Residential HVAC "ASHRAE" Loads	$595.00	$350.00
	CHVAC - (100 Zone Capacity) Residential HVAC "ASHRAE" Loads	$995.00	$550.00
	CHVAC - (Unlimited Capacity) Residential HVAC "ASHRAE" Loads	$1495.00	$800.00

*** Allied Recommended Selection**

Pricing Suggestions: Armstrong dealers should receive a 10% discount off suggested price, whereas Comfort Team dealers should receive a 30% discount (if possible).

SHIP TO:		DISTRIBUTOR AUTHORIZATION	
Name		Name	
Address		Address	
City		City	
State	Zip	State	Zip
Telephone		Telephone	
Signature		Authorized Signature	
		Purchase Order #	

Send or fax order form to: **Allied Air Enterprises Inc., 215 Metropolitan Dr., West Columbia, SC 29170**
Fax 803-738-4001

Elite Software Product Order Form

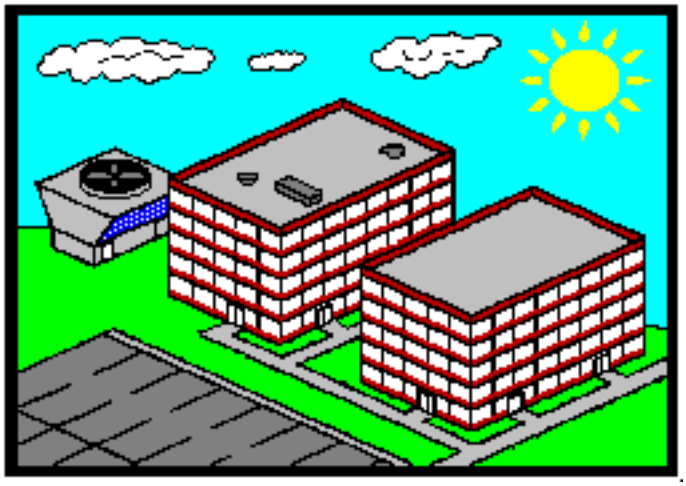
Date	
Company Name	
Attention Name	
Address 1	
Address 2	
City	State / Zip
Telephone	Fax

Additional Comments

Company Name																				
Address																				
City, State, Zip																				

	Product Name	Price	Comment
1			
2			
3			
4			
5			
6			
7			
8			
Shipping/Tax (if in Texas)			Filled by:

Elite Software CHVAC



The Elite Software CHVAC program quickly and accurately calculates the maximum heating and cooling loads for commercial buildings. CHVAC allows an unlimited number of zones which can be grouped into as many as 100 air handling systems. CHVAC automatically looks up all cooling load and correction factors necessary for computing loads. In addition, the programs can look up outdoor design weather data for over 300 cities located around the world. There is also provision for editing the weather data as well as adding data for other cities. Comprehensive reports list the general project data, detailed zone loads, air handler summary loads, outside air loads, total building loads, building envelope analysis, tonnage requirements, CFM air quantities, chilled water flow rates (if applicable), and complete psychrometric data with entering and leaving coil conditions. Other outstanding features include ASHRAE Standard 62 analysis, automatic building rotation, 360 degree wall orientations, tilted glass, exterior shading, internal operating load profiles, variable indoor design temperatures, people diversity, pretreated outside air, seasonal infiltration and ventilation rates, reheat loads, duct gains and losses, and return air plenums. CHVAC project data files can also be used by Elite Software's EZDOE energy analysis program. A Dos version of CHVAC exists, but it is slightly less capable.

Program Output

The CHVAC program provides eleven types of reports which can be selectively previewed on screen or printed as desired. CHVAC supports all printers that work with Windows and numerous full color reports are available. The reports are: General Project Data, Air Handler Input Data, Zone Input Data, Detailed Project Zone Loads, Air System Zone Summary, Total Building, Air System, and Zone Load Profiles, Air System Total Load Summary, Air System Psychrometric Analysis, Overall Building Envelope Report, Pie Charts, Bar Graphs, and the Total Building Load Summary. Air system summary data can be exported to your favorite spread sheet. See the sample reports below.

Program Input

CHVAC is a true Windows program that uses all the latest data entry techniques such as toolbars, hyper linked help, and form tabs. All input data is checked at the time of entry so that no improper data can be entered. Five types of data are requested: general project data, outdoor design data, building material data, air handler data, and specific zone data. The general project data includes the project and client name, designer, building opening and closing hours, internal operating load schedules, and any desired safety factors. The outdoor

design data includes the summer and winter outdoor design conditions (automatically looked up for you if a city reference is given) and the desired ventilation and infiltration rates. The building material data includes the definition of master building material types for roofs, walls, partitions, glass sections, and exterior shading. A user defined material library is available for saving the data on common material types. The air handler data includes the fan and terminal type, the desired heating and cooling supply air temperatures and data for duct heat gains and losses. The zone data includes the zone name, floor length and width, number of people, equipment watts, lighting watts, external shading data, and specific roof, wall, partition, floor, and glass data.

CHVAC/QHVAC Differences

Although CHVAC is easy to use, it is primarily intended for consulting engineers and large contractors who preform very sophisticated and detailed HVAC load calculations. On the other hand, QHVAC is a low cost commericial loads program primarily intended for architectesand contractors who design small to medium sized commericial buildings. Both CHVAC and QHVAC follow the ASHRAE calculation procedures, but QHVAC does not have all the many options that CHVAC has, and thus it is somewhat faster and simpler to use. Some of the main differences are: 1) QHVAC only allows 50 zones grouped under ten air handling systems, 2) QHVAC does not allow for exterior shading and tilted glass, 3) QHVAC only accepts wall orientations on the eight compass directions, 4) QHVAC does not allow variable indoor design temperatures, 5) QHVAC does not allow pretreated outside air, and 6) QHVAC has no provision for internal load profiles on lights, people, and equipment. To decide whether QHVAC or CHVAC is more appropriate for your needs, carefully conside the features of each. If QHVAC is missing just one of the featueres you need or soon will need, you should use CHVAC as it is almost as easy to use as QHVAC.

CHVAC Features

- Calculates Peak Heating & Cooling Loads
- Computes CFM Air Quantities With Psychrometrics
- ***Calculates Runout and Main Trunk Duct Sizes***
- ***Automates Compliance with ASHRAE Standard 62***
- ***CHVAC Calculates in both Metric and English Units***
- Allows Simultaneous Infiltration and Ventilation
- Selects Equipment from AR/GAMA Databases
- CHVAC Allows Unlimited No. of Zones per Project
- ***Zones May be Optionally Grouped Under VAV Boxes***
- Allows 12 Walls, 12 Windows, and 5 Roofs per Zone
- Prints Numerous Color Pie Charts and Bar Graphs
- Spreadsheet Output File Compatibility
- ***Links with both AUDIT and EZDOE Energy Programs***

System Requirements

CHVAC requires a computer system with at least 16 meg of memory and Windows 95 or Windows NT.

Calculation Method

Both CHVAC and QHVAC perform calculations using the CLTD procedures described in the ASHRAE Handbook of Fundamentals. The programs use exact CLTD and MSHGF table values where possible, otherwise direct calculations are made. This calculation technique allows the programs to calculate for any building orientation and still produce output results that can be easily verified by hand.

ADVANCED FEATURES

CHVAC contains many, many advanced features. Listed below are just some of the capabilities of CHVAC.

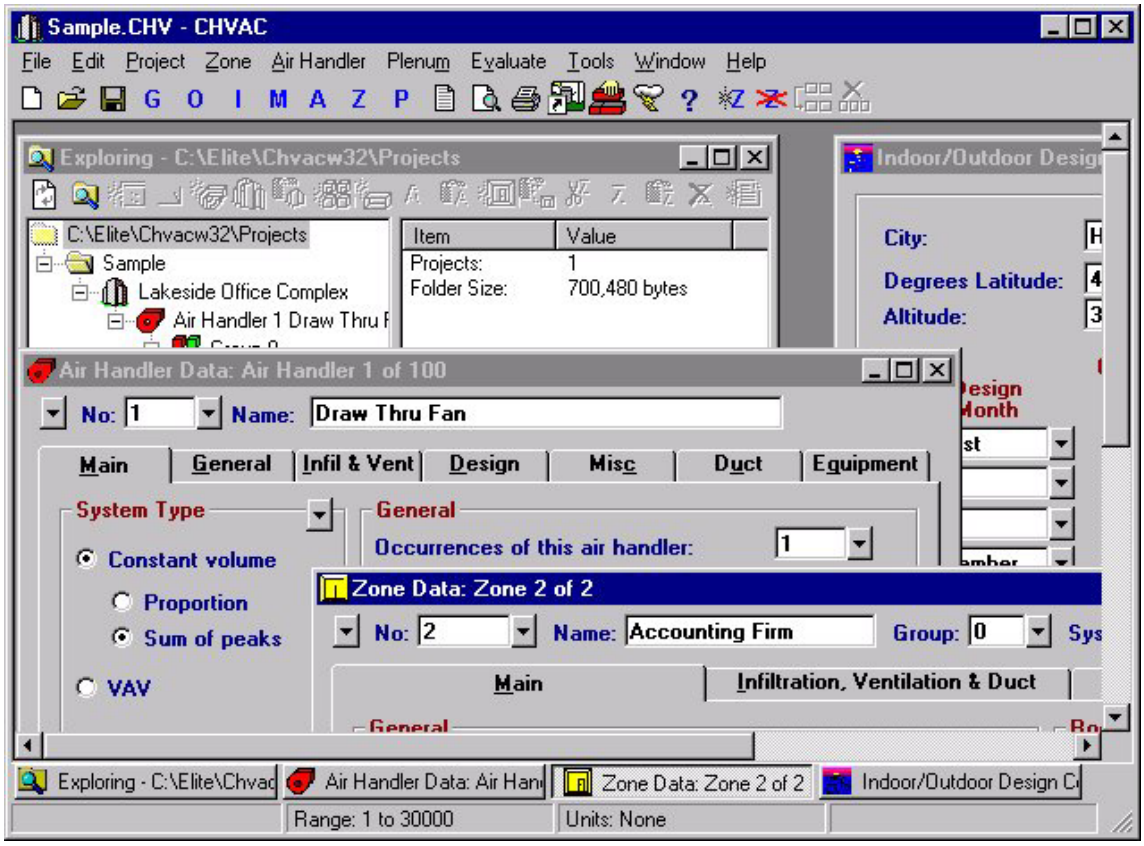
- Calculates Peak Heating and Cooling Loads
- Calculates Both Heating & Cooling Cfm Requirements
- Calculates Runout and Main Trunk Duct Sizes
- ***Automates Compliance with ASHRAE Standard 62***
- Provides Overall Building Envelope Report
- ***Spreadsheet File Compatibility***
- Performs Complete Psychrometric Analysis
- ***Prints Bar Graphs and Exploded Pie Charts***
- Exterior Shading Handles Overhangs, Fins, & Glass Tilt
- ***Uses Exact ASHRAE CLTD Procedures***
- Built-in Design Weather Data for Hundreds of Cities
- Analyzes Up to 12 Months Per Calculation
- Calculates 24 Hours per Design Day
- ***Allows Unlimited Number of Zones per Project***
- Zones May Be Grouped Under 100 Air Handlers
- ***Zones May Be Optionally Grouped Under VAV Boxes***
- Allows 12 Walls, 12 Windows, and 5 Roofs per Zone
- Allows Simultaneous Infiltration and Ventilation
- Allows Different Summer and Winter Air Rates
- Allows Varying Indoor Conditions Within a Project
- Allows 6 Master Roof Types, 8 Master Wall Types, 8 Master Partition Types, and 20 Master Glass Types
- Provides a User Defined Master Material Library
- Allows Up to 10 Internal Operating Load Profiles
- ***Allows Full 360 Degree Wall and Glass Orientations***
- Allows Glass to be titled from 0 to 180 degrees
- Allows for Roof and Wall Color Effects

- Provision for Both VAV and Constant Volume Systems
- Proper Handling of Return Air Plenum Loads
- Accounts for People Diversity in Total Building Load
- Computes Supply Fan Horsepower and Heat Gains
- Accounts for Both Draw-thru and Blow-thru Fans
- Calculates Reheat Requirements if Necessary
- Computes Supply and Return Duct Gains and Losses
- Allows Direct Specification of Supply CFM Quantiites
- Allows Specification of Minimum Supply Air Quantities
- Allows Heating Only, Cooling Only, or Both
- Excess Supply Air Can be Handled as Reheat, Reserve Capacity, or by Adjusting the Leaving Coil Conditions
- Leaving Coil Conditions Can be Specified with a Desired Dry Bulb Temperature or a Relative Humidity
- Calculates Chilled and Hot Water Coil Flow Rates
- Allows for Pretreated Outside Air
- Allows Heating and Cooling Safety Factors
- Lighting & Equipment Watts along with No. of People can be Entered Directly or on a Per Square Foot Basis
- Selects Equipment from the ARI/GAMA Databases
- Creates Custom Sales Proposals

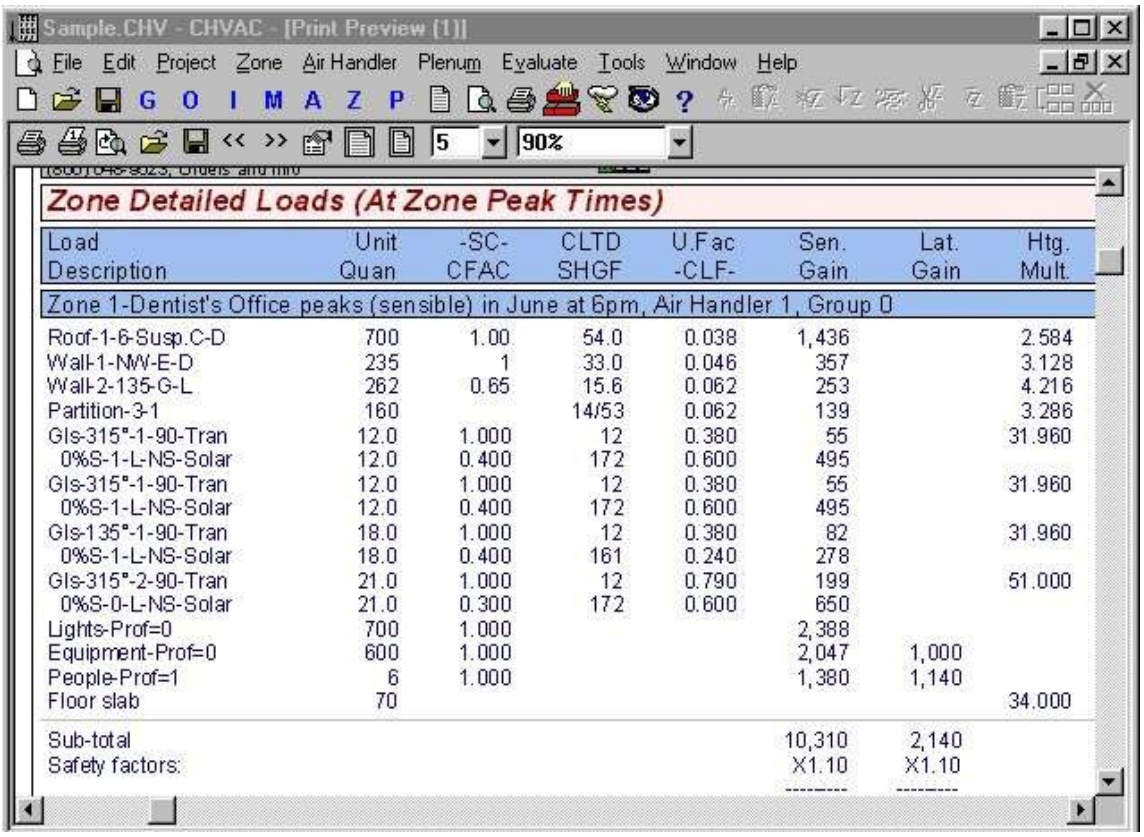
Links to Other Programs

CHVAC not only calculates peak heating and cooling loads, it also aids in selecting hvac equipment and analyzing building operating costs. Project data from CHVAC can be exported to both Elite Software's AUDIT and EZDOE programs. Export to AUDIT when you want to analyze residential and light commercial projects, essentially any application which uses unitary hvac equipment. Export to EZDOE when you want to analyze large commercial projects that require precise modeling of variable loads, equipment, operating schedules, and control schemes. For just selecting unitary hvac equipment, use the built-in feature of reading equipment performance databases published by the American Refrigeration Institute (ARI) and the Gas Appliance Manufacturers Association (GAMA). If you want to create a custom sales proposal, use the special export feature to Microsoft Office 97/Word. This allows you to take the built-in sales proposal and further customize it.

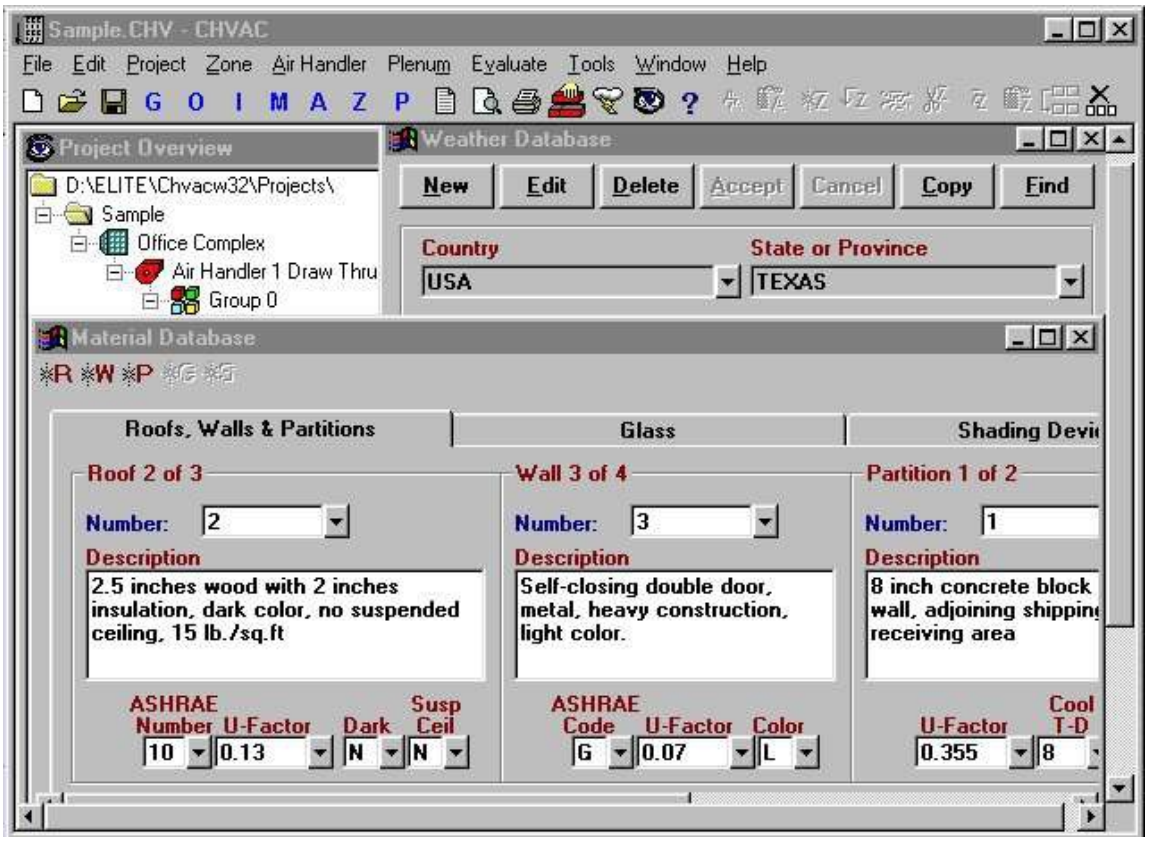
Sample Report 1



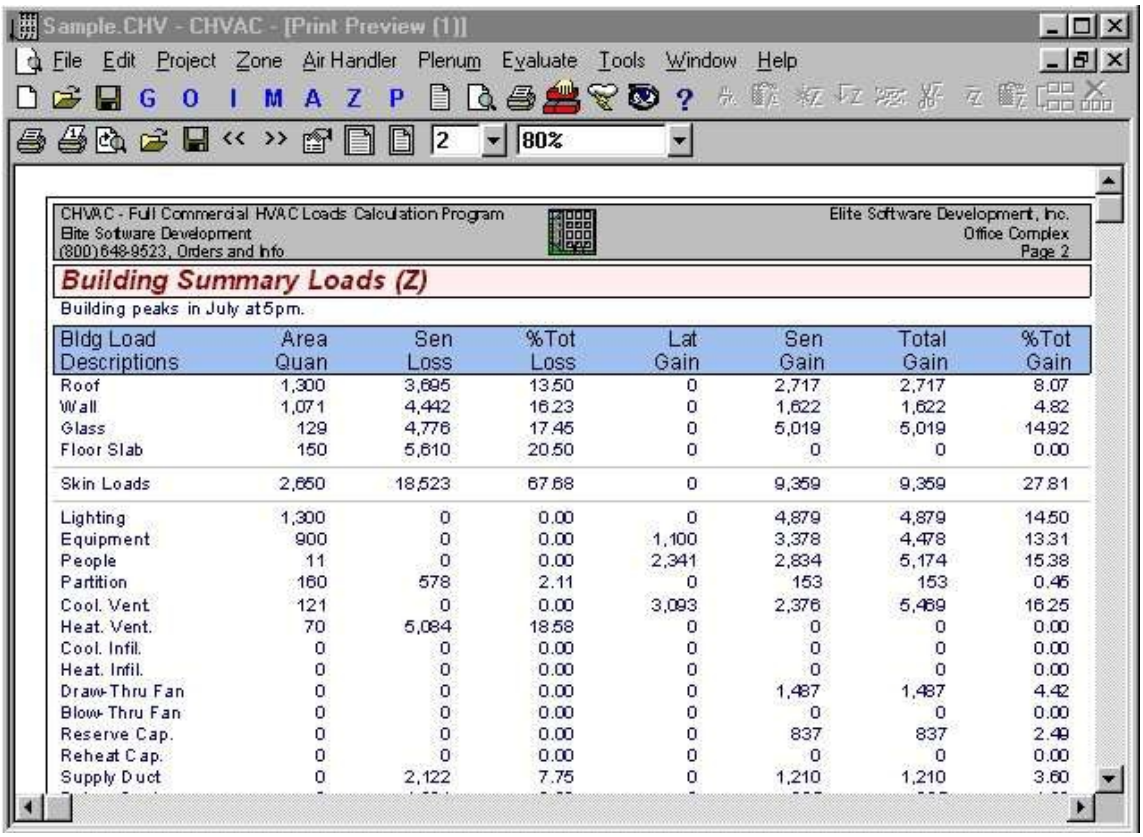
Sample Report 2



Sample Report 3

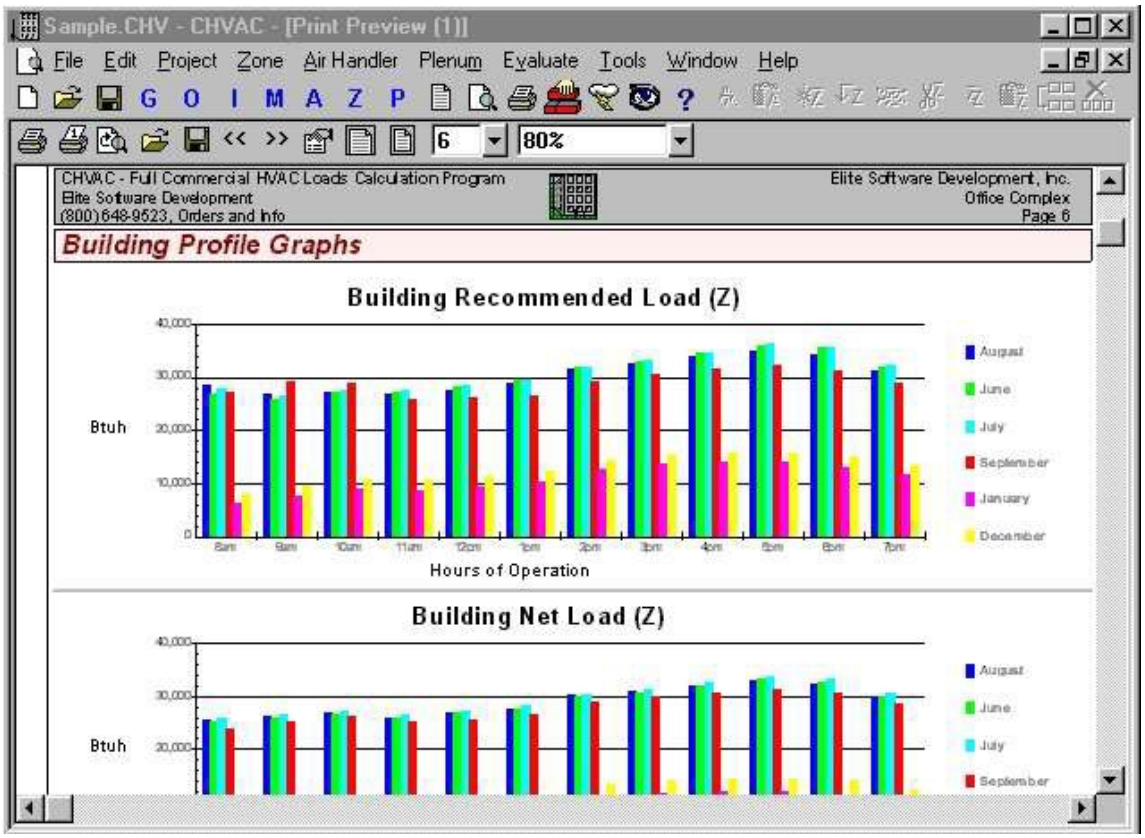


Sample Report 4

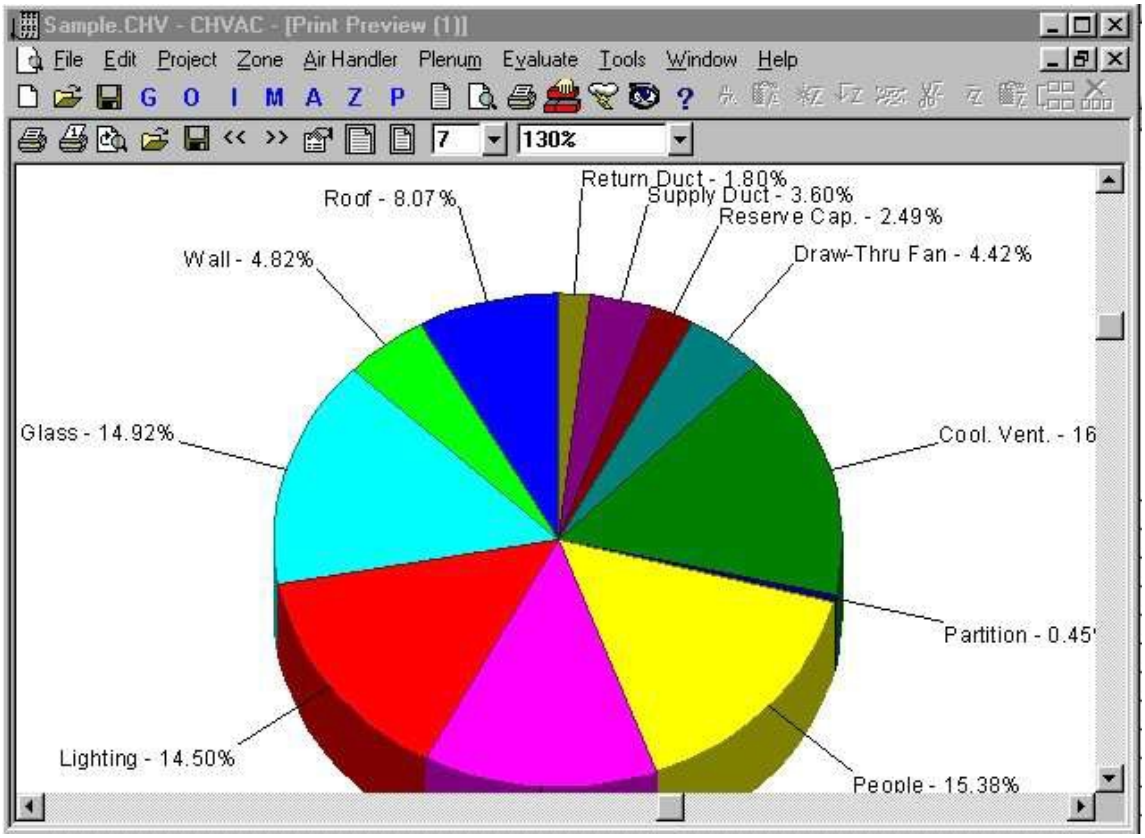


Bldg Load Descriptions	Area Quan	Sen Loss	%Tot Loss	Lat Gain	Sen Gain	Total Gain	%Tot Gain
Roof	1,300	3,695	13.50	0	2,717	2,717	8.07
Wall	1,071	4,442	16.23	0	1,622	1,622	4.82
Glass	129	4,776	17.45	0	5,019	5,019	14.92
Floor Slab	150	5,610	20.50	0	0	0	0.00
Skin Loads	2,650	18,523	67.68	0	9,359	9,359	27.81
Lighting	1,300	0	0.00	0	4,879	4,879	14.50
Equipment	900	0	0.00	1,100	3,378	4,478	13.31
People	11	0	0.00	2,341	2,834	5,174	15.38
Partition	160	578	2.11	0	153	153	0.45
Cool. Vent.	121	0	0.00	3,093	2,376	5,469	16.25
Heat. Vent.	70	5,084	18.58	0	0	0	0.00
Cool. Infil.	0	0	0.00	0	0	0	0.00
Heat. Infil.	0	0	0.00	0	0	0	0.00
Draw-Thru Fan	0	0	0.00	0	1,487	1,487	4.42
Blow-Thru Fan	0	0	0.00	0	0	0	0.00
Reserve Cap.	0	0	0.00	0	837	837	2.49
Reheat Cap.	0	0	0.00	0	0	0	0.00
Supply Duct	0	2,122	7.75	0	1,210	1,210	3.60

Sample Report 5



Sample Report 6



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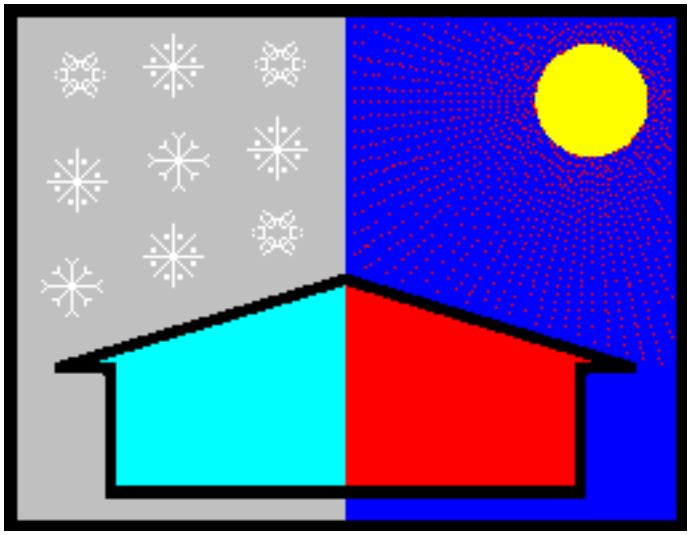
Elite Software RHVAC



The Elite Software RHVAC Program quickly and accurately calculates peak heating and cooling loads for residential and small commercial buildings in accordance with the seventh edition of the ACCA Manual J. This Windows based program is visually intuitive and exceptionally easy to use. The Heat Transfer Multipliers (HTM values) for all the walls, windows, doors, and roofs listed in Manual J are stored on disk and automatically looked up by the program as needed. Although HTM values are taken from Manual J directly, the user does have the option of entering his own U-Value for each wall, roof, or glass section so that a modified HTM value is used. Design weather data for over 300 cities is built-in to the program. In addition, the user can revise the existing weather data and add additional weather data as desired. Zoning cfm adjustments are automatically handled by the program as needed.

RHVAC also calculates the size of the runout ducts and the main trunk duct. Equipment can be selected from the ARI and GAMA databases and printed in the reports. Comprehensive reports list the general project data, equipment information, total building load summary, detailed room load calculations, and a room load summary for each zone and system complete with heating and cooling cfm values. Color graphic bar graphs and pie charts can be printed as well. Other outstanding features include exterior glass shading, ventilation air, miscellaneous latent loads, default room data, automatic rotation of the entire building, and the ability to share data with Elite Software's AUDIT operating cost analysis program. The Dos version of RHVAC provides similar features as the Windows version, but it is less capable so please call for details on the differences.

Full Windows Capability

RHVAC is a true Windows program and offers exceptional productivity gains as it is visually intuitive, permits simultaneous operation of multiple programs and allows the easy exchange of data between programs. The program lets you take full advantage of Windows capabilities like cut and paste editing, high resolution graphics display and exceptionally complete help resources. The program's help features greatly facilitate learning program operation. RHVAC's Windows features allow it to produce a full array of easy to understand graphic reports in vivid color. The program supports most black and white and color printers.

Program Output

The RHVAC program provides numerous presentation quality reports including a title page, general project data, total building and system load summaries, room summary data grouped

by zone, detailed room load reports, and numerous color pie charts and bar graphs. Shown below are just some of the many reports that can be printed or viewed on screen.

RHVAC Features

- Quickly Calculates Peak Heating and Cooling Loads
- ***True Windows Program! (Dos Version Available)***
- Determines Optimal Room CFM Requirements
- Computes Room by Room, Zone, and Whole Building
- ***Calculates Runout and Main Trunk Duct Sizes***
- Follows ACCA Manual J Seventh Edition
- Allows 1000 Rooms Grouped in up to 10 Zones per System
- Rooms and Zones Can Be Assigned to 15 Systems
- Allows 10 Walls, 10 Windows, and 4 Roofs per Room
- ***Allows Custom Construction Material Descriptions***
- Looks up HTM & U-Values or Lets You Specify Them
- ***Equipment Selection From ARI and GAMA Databases***
- Shares Project Data with the AUDIT Energy Program
- ***Prints Exploded Color Pie Charts and Bar Graphs***

Calculation Method

The RHVAC Program follows the exact methodology described in the Air Conditioning Contractors of America (ACCA) Manual J, Seventh Edition entitled “Load Calculation for Residential Winter and Summer Air Conditioning”. Although intended primarily for residential applications, the Manual J calculation procedures are also appropriate for some light commercial applications with additional data. All results computed by the RHVAC program can be easily verified by hand to be in accordance with ACCA Manual J.

Program Input

The RHVAC program is a true Windows program complete with toolbars and hyperlinked help. All input data is checked at the time of entry so that no improper data can be entered. Two types of data are requested: general project data and specific room data.

The general project data includes the summer and winter design conditions, the outside air requirements, exterior shading and overhang data, the project name, the client name, and the designer name. The room input data includes specific information on the roof, walls, doors, and windows as well as general information on the room name, the number of occupants, and the number of appliances. Help is provided on all inputs. Data sheets are also provided for the easy organization of your information.

System Requirements

RHVAC requires an IBM PC compatible computer equipped with at least 8 megabytes of memory and Microsoft Windows 3.1 or higher.

Sample Report 1

RHVAC - Residential & Light Commercial HVAC Loads Program
Elite Software Development
Bryan, TX 77802

April 20, 1995

Elite Software Development, Inc.
Jones Residence
Page 2

Total Building Summary Loads

Component Description	Area Quan	Sen. Loss	Lat. Gain	Sen. Gain	Total Gain
1G Window Low Emit Glass e=.4 Wood Frame	4	236	0	152	152
2C Window Single Pane & Storm Clear Glass Metal	24	1,124	0	657	657
4C Window Double Pane & Storm Clear Glass Metal Frame	21	741	0	483	483
7G Skylight Double Plastic Dome/Clear Glass Wood Frame	12	575	0	1,920	1,920
8K Glass Door Single & Storm Low e TIM Frame	42	1,397	0	1,178	1,178
10F Door Wood Solid Core & Metal Storm	21	484	0	159	159
12D Wall R-11 + 1/2" Asphlt Board(R-1.3)	720	4,147	0	1,359	1,359
16E Ceiling R-22 Insulation	180	622	0	380	380
17K Roof Exp Bms 1 1/2" Wood Dk+R-13	390	1,684	0	1,029	1,029
20C Floor Over Open Crawl Hardwood + R-13	120	657	0	137	137
20I Floor Over Open Crawl Carpet + R-19	285	985	0	205	205
22C Slab on Grade 11/2" Edge Insulation(R-8)	35	680	0	0	0
Subtotals for structure:	1,854	13,332	0	7,659	7,659
Active People:	5	0	1,150	1,500	2,650
Inactive People:	0	0	0	0	0
Appliances:	0	0	800	1,500	2,300
Lighting:	0	0		0	
Ductwork:	0	1,107	0	527	527
Infiltration: Winter CFM: 66.6, Summer CFM: 29.6	124	5,275	725	651	1,376
Ventilation: Winter CFM: 0.0, Summer CFM: 0.0	0	0	0	0	0
Sensible Gain Total:				11,837	
Temperature Swing Multiplier:				X1.00	
Building Load Totals:		19,714	2,675	11,837	14,512

Check Figures

Total Building Supply CFM:	538	CFM per square foot:	0.969
Square feet of room area:	555	Square feet per ton:	433.235

Building Loads

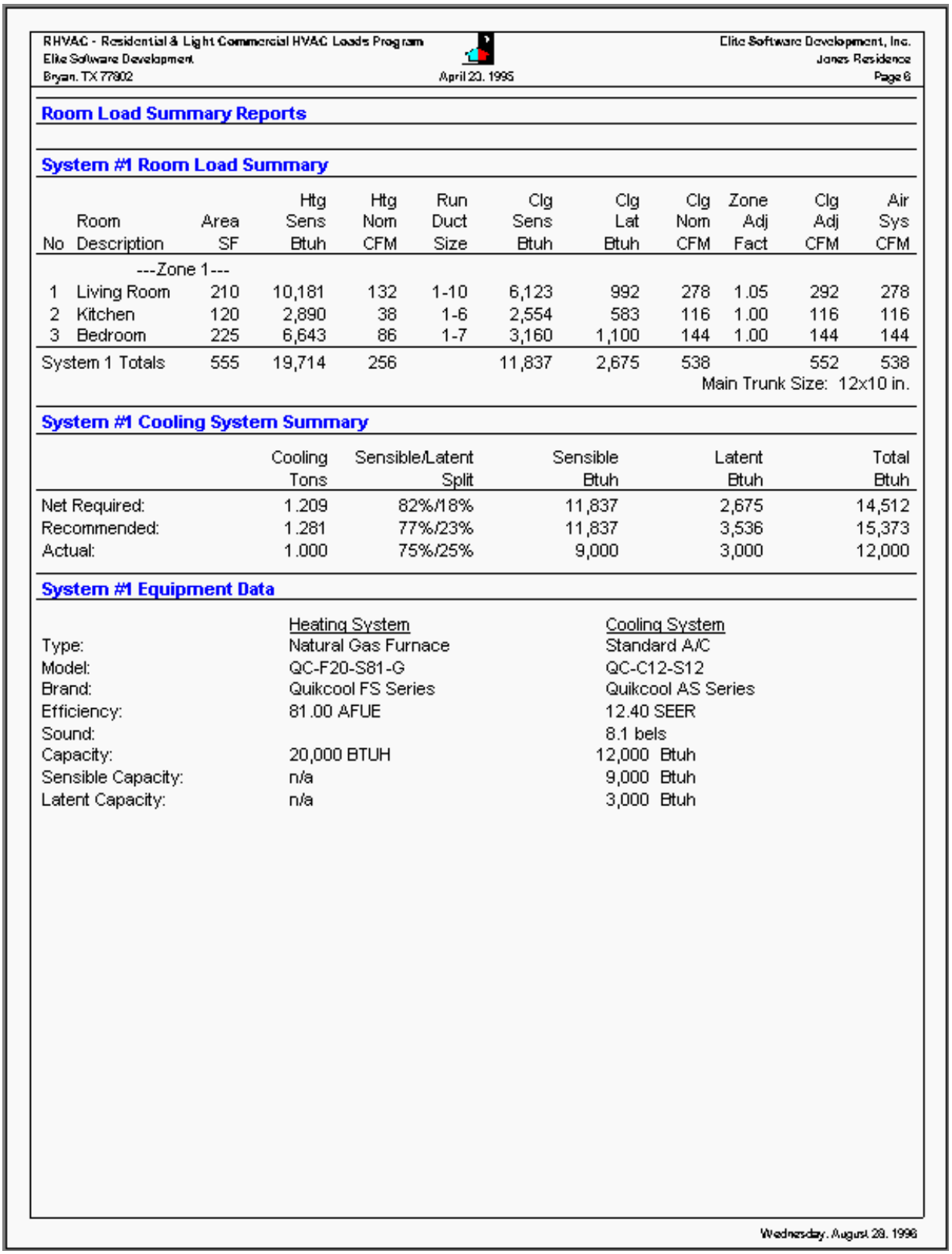
Total heating required with outside air:	19,714 Btuh	19.714	MBH
Total sensible gain:	11,837 Btuh	82	%
Total latent gain:	2,675 Btuh	18	%
Total cooling required with outside air:	14,512 Btuh	1.209	Tons (based on sensible + latent)
		1.281	Tons (based on 77% sensible capacity)

Notes

Calculations are based on 7th edition of ACCA Manual J.
All computed results are estimates as building use and weather may vary.
Be sure to select a unit that meets both sensible and latent loads.

Wednesday, August 28, 1996

Sample Report 2



RHVAC - Residential & Light Commercial HVAC Loads Program
Elite Software Development
Bryan, TX 77802

April 23, 1995

Elite Software Development, Inc.
Jones Residence
Page 6

Room Load Summary Reports

System #1 Room Load Summary

No	Room Description	Area SF	Htg Sens Btuh	Htg Nom CFM	Run Duct Size	Clg Sens Btuh	Clg Lat Btuh	Clg Nom CFM	Zone Adj Fact	Clg Adj CFM	Air Sys CFM
	---Zone 1---										
1	Living Room	210	10,181	132	1-10	6,123	992	278	1.05	292	278
2	Kitchen	120	2,890	38	1-6	2,554	583	116	1.00	116	116
3	Bedroom	225	6,643	86	1-7	3,160	1,100	144	1.00	144	144
System 1 Totals		555	19,714	256		11,837	2,675	538		552	538

Main Trunk Size: 12x10 in.

System #1 Cooling System Summary

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	1.209	82%/18%	11,837	2,675	14,512
Recommended:	1.281	77%/23%	11,837	3,536	15,373
Actual:	1.000	75%/25%	9,000	3,000	12,000

System #1 Equipment Data

	Heating System	Cooling System
Type:	Natural Gas Furnace	Standard A/C
Model:	QC-F20-S81-G	QC-C12-S12
Brand:	Quikcool FS Series	Quikcool AS Series
Efficiency:	81.00 AFUE	12.40 SEER
Sound:		8.1 bels
Capacity:	20,000 BTUH	12,000 Btuh
Sensible Capacity:	n/a	9,000 Btuh
Latent Capacity:	n/a	3,000 Btuh

Wednesday, August 28, 1996

Sample Report 3

Project Summary

		Company:	Jake's Heating and Air
Client:	Mr. and Mrs. Jeffrey Jones	Representative:	Jake Massetti
Address:	1234 First Street NW	Address:	8724 West Halver St.
City:	Harrisburg, PA 17177	City:	Allentown, PA 18105
Phone:	(717) 555-5294	Phone:	(717) 555-HEAT
Fax:	None	Fax:	(717) 555-COOL
		Comment:	Bid prepared by Rodney.

Design Data

Project Name:		Jones Residence
Comment:		Don't forget the picture window which will be installed later.
Reference City:		Harrisburg, Pennsylvania
Daily Temperature Range:		Medium
Latitude:	40	Degrees
Elevation:	308	Feet

	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum.	Indoor Dry Bulb	Grains Difference
Winter:	0	N/A	N/A	72	N/A
Summer:	95	75.22	50%	75	36

Check Figures

Total Building Supply CFM:	538	CFM per square foot:	0.969
Square feet of room area:	555	Square feet per ton:	433.235

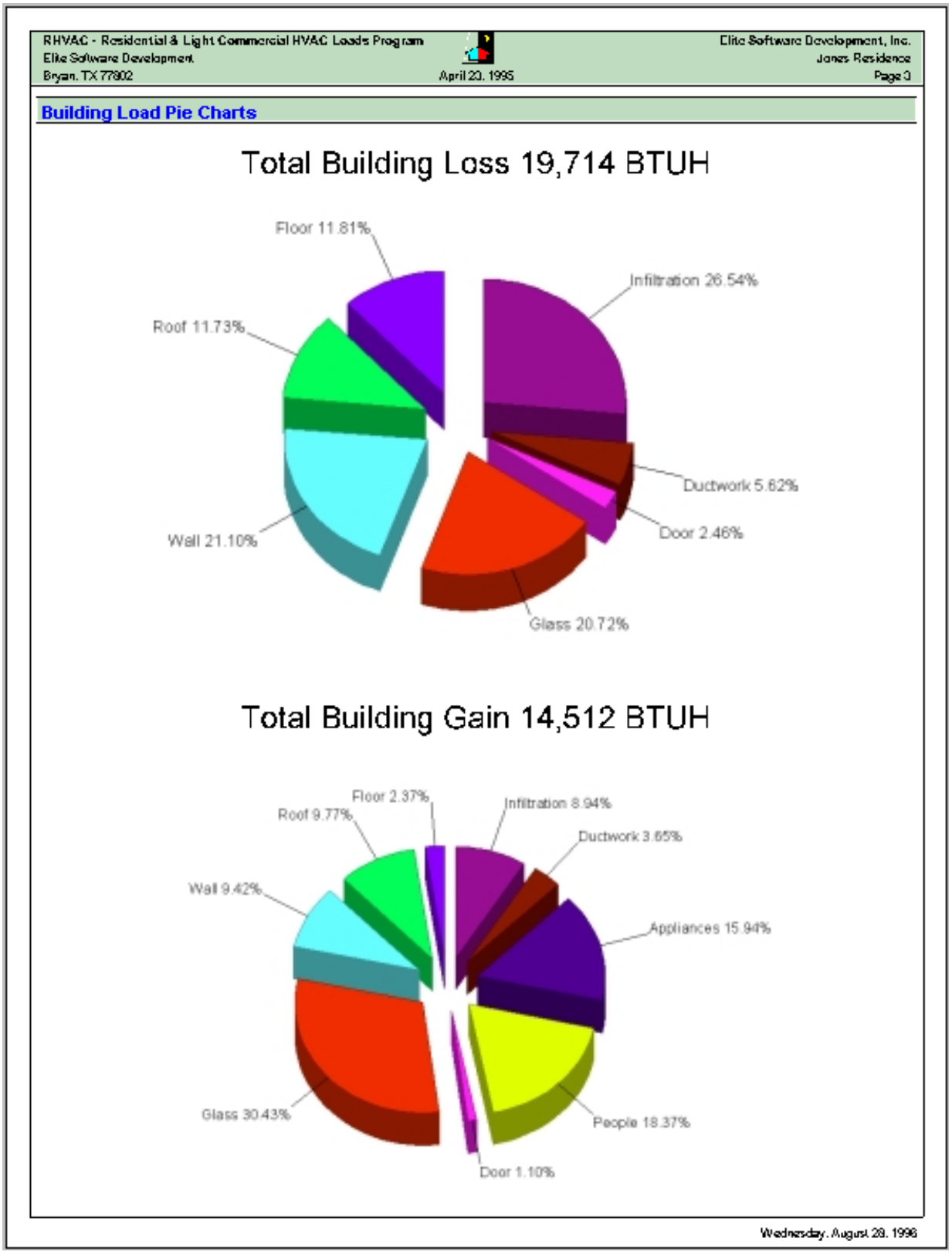
Building Loads

Total heating required with outside air:	19,714 Btuh	19.714	MBH
Total sensible gain:	11,837 Btuh	82	%
Total latent gain:	2,675 Btuh	18	%
Total cooling required with outside air:	14,512 Btuh	1.209	Tons (based on sensible + latent)
		1.281	Tons (based on 77% sensible capacity)

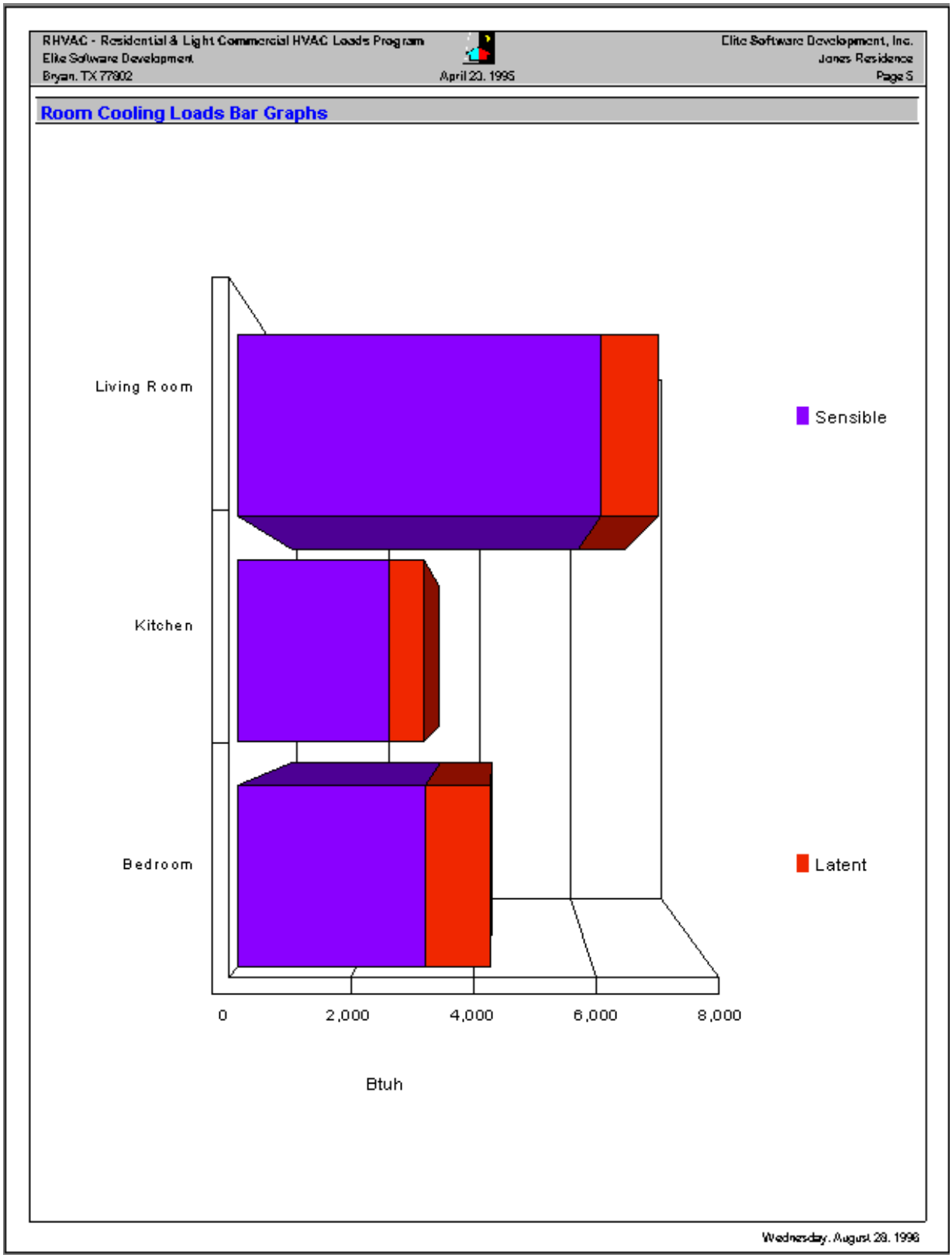
Notes

Calculations are based on 7th edition of ACCA Manual J.
All computed results are estimates as building use and weather may vary.
Be sure to select a unit that meets both sensible and latent loads.

Sample Report 4



Sample Report 5



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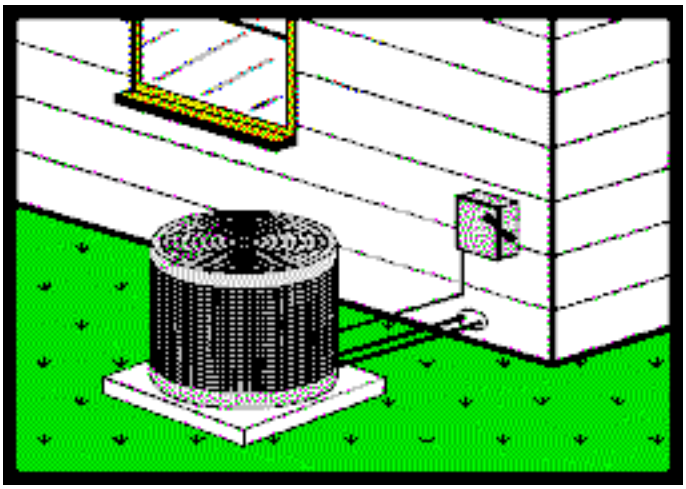
Elite Software
AUDIT



The Elite Software AUDIT Program calculates monthly and annual heating and cooling costs for residential and light commercial buildings. Virtually any type of cooling and heating system can be simulated by AUDIT including standard DX, evaporative, air source heat pumps, water source heat pumps, York Triathlon, and all types of fossil fueled furnaces and boilers. An optional version of AUDIT with appliance capabilities can calculate appliance and hot water energy use as well.

AUDIT uses heating degree days, weather bin data, and full load cooling hours in its calculations. Weather data for over 300 cities throughout the world is built-in to AUDIT and additional weather data can be easily added.

Along with calculating energy costs, AUDIT also performs an economic analysis that allows you to compare system types and costs over any given study period. There is even a loan and lease analysis report designed to demonstrate affordability of better systems by showing that the effective net monthly cost is often very low when monthly energy savings are considered.

To make system comparisons easy, AUDIT allows you to manually enter equipment data or automatically look it up for you from ARI and GAMA equipment data files. AUDIT provides a wide selection of nicely formatted color charts, graphs, and reports. The DOS version of AUDIT provides the same basic features as the Windows version, but it is less capable and you should call Elite Software for details on the differences.

System Requirements

AUDIT requires an IBM PC compatible computer equipped with at least 8 megabytes of memory and Microsoft Windows 3.1 or higher.

Program Output

The AUDIT program provides numerous color presentation quality reports including a title page, project summary, system comparisons, appliance analysis, hot water heating, investment, loan, and lease analysis, line graphs, pie charts, and bar graphs. The reports can be previewed on screen or printed on any model printer supported by Windows. Any combination of detailed and summary reports can be selected for printing by the user. All reports reflect the input data that caused the calculated results. Shown below are just a few of the many reports and graphs that can be printed.

AUDIT Features

- ***Calculates Monthly & Annual Heating & Cooling Costs***
- ***True Windows Program! (Dos Version also Available)***
- Simulates Nearly all Types of HVAC Systems
- ***Optionally Analyzes Appliances and Hot Water Costs***
- Handles Both Simple and Complex Utility Rate Structures
- ***References ARI and GAMA Equipment Files***
- Provides Comprehensive and Concise Graphical Reports
- ***Prints Color Pie Charts, Bar and Line Graphs***
- Performs Economic Comparison of HVAC Systems
- Provides Loan and Lease Analysis for Purchasing Systems
- ***Great Sales Tool for Selling HVAC Systems***

Equipment Selection

Although you can manually enter system information on equipment from any manufacturer, AUDIT also allows you to quickly select model numbers from both the ARI and GAMA equipment databases. By selecting a model number, all the information for the model is looked up and read into the program. AUDIT can look up equipment data for all the manufacturers (over 70) whose products are listed in the Air Conditioning and Refrigeration Institute (ARI) directory and the Gas Appliance Manufacturers Association (GAMA) directory. The ARI and GAMA database disks are $50 each and may be obtained from Elite Software.

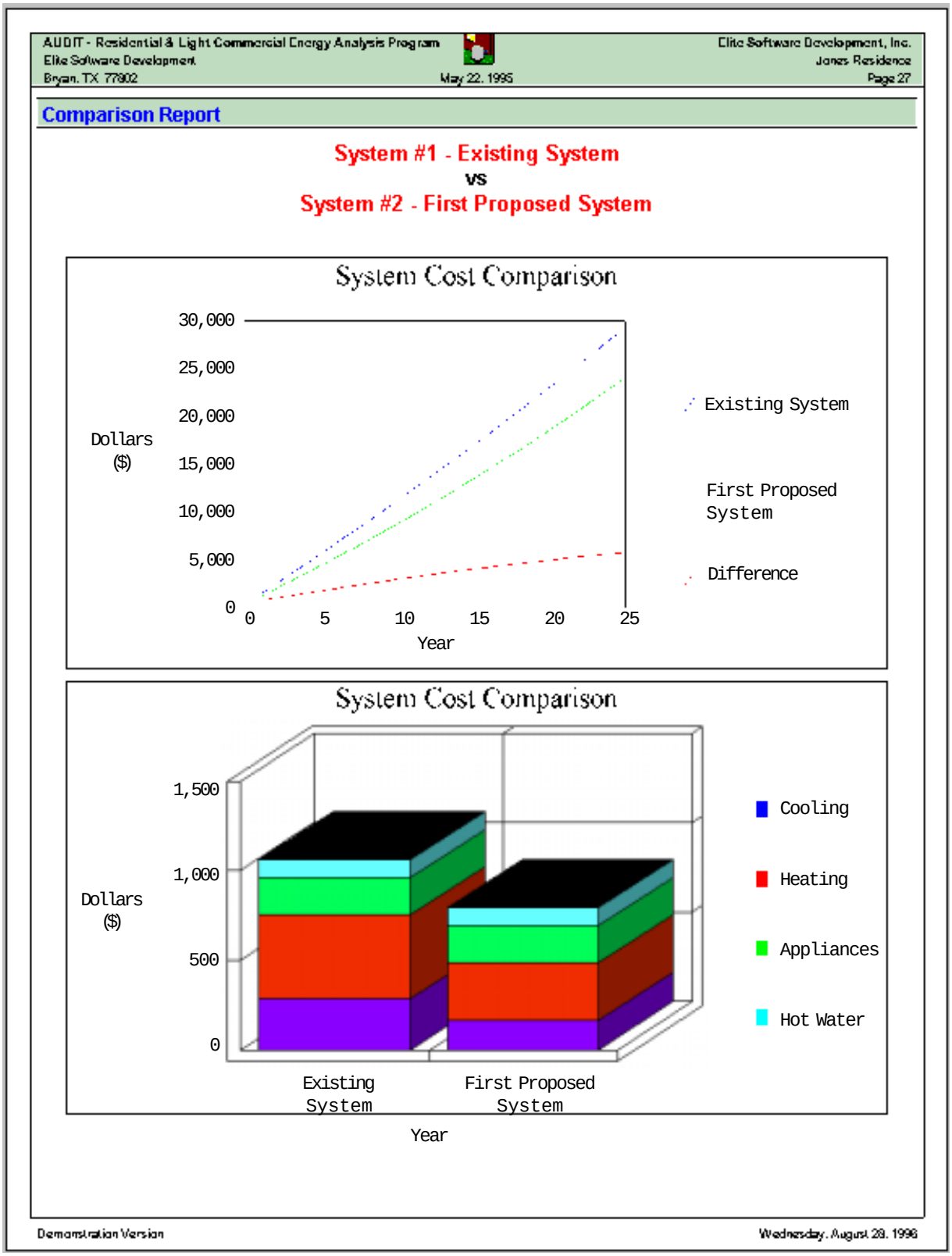
Full Windows Capability

AUDIT is a true Windows program and offers exceptional productivity gains as it is visually intuitive, permits simultaneous operation of multiple programs and allows the easy exchange of data between programs. The program lets you take full advantage of Windows capabilities like cut and paste editing, high resolution graphics display and exceptionally complete help resources. The program's help features greatly facilitate learning program operation. AUDIT's Windows features allow it to produce a full array of easy to understand graphic reports in vivid color. The program supports most black and white and color printers.

Program Input

The AUDIT Program is a true Windows program and as such it operates in standard Windows fashion complete with toolbars and hyper linked help. All input data is checked at the time of entry so that no improper data can be entered. Two types of data are requested: general project data and specific HVAC system data. The general project data includes the summer and winter design conditions, total cooling hours, the project name and location, client information, fuel cost data, optional appliance data, and the design heating and cooling loads. The HVAC system data includes specific information on the system type, model number, efficiency, cost, capacity, and fuel used. Up to six HVAC systems may be defined per project and each system can have a backup heating system specified as well. Economic data concerning initial system cost, interest and inflation rates, and loan amounts can also be entered. In order to minimize redundant input, AUDIT can also import data from project data files created by the Elite Software RHVAC program that performs Manual J HVAC load calculations.

Sample Report 1

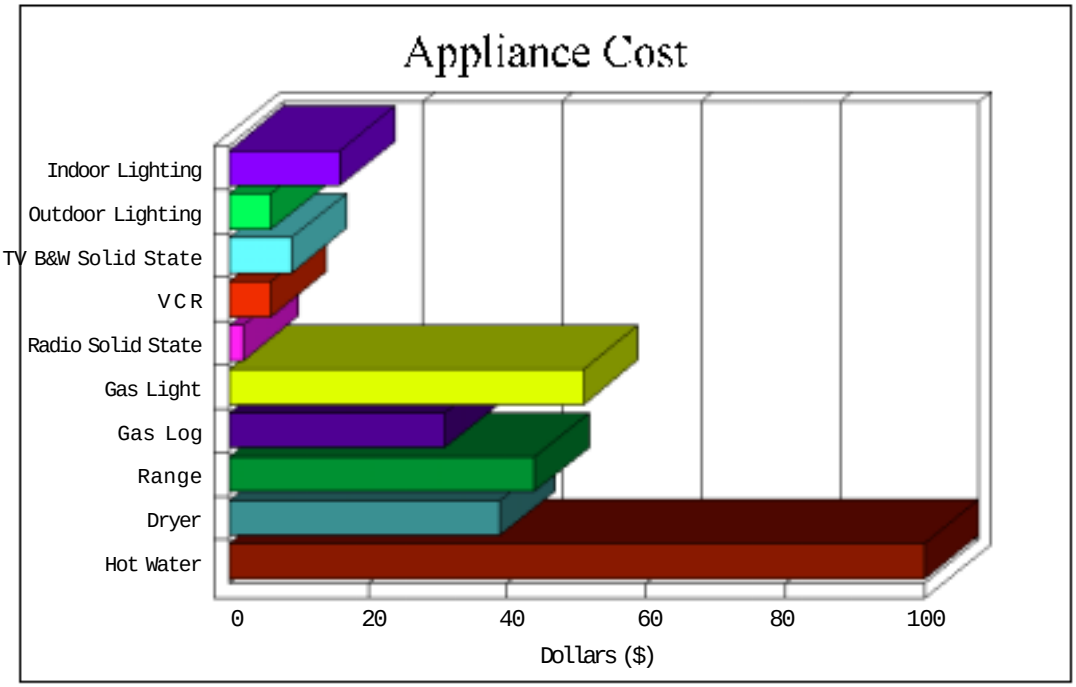


Sample Report 2

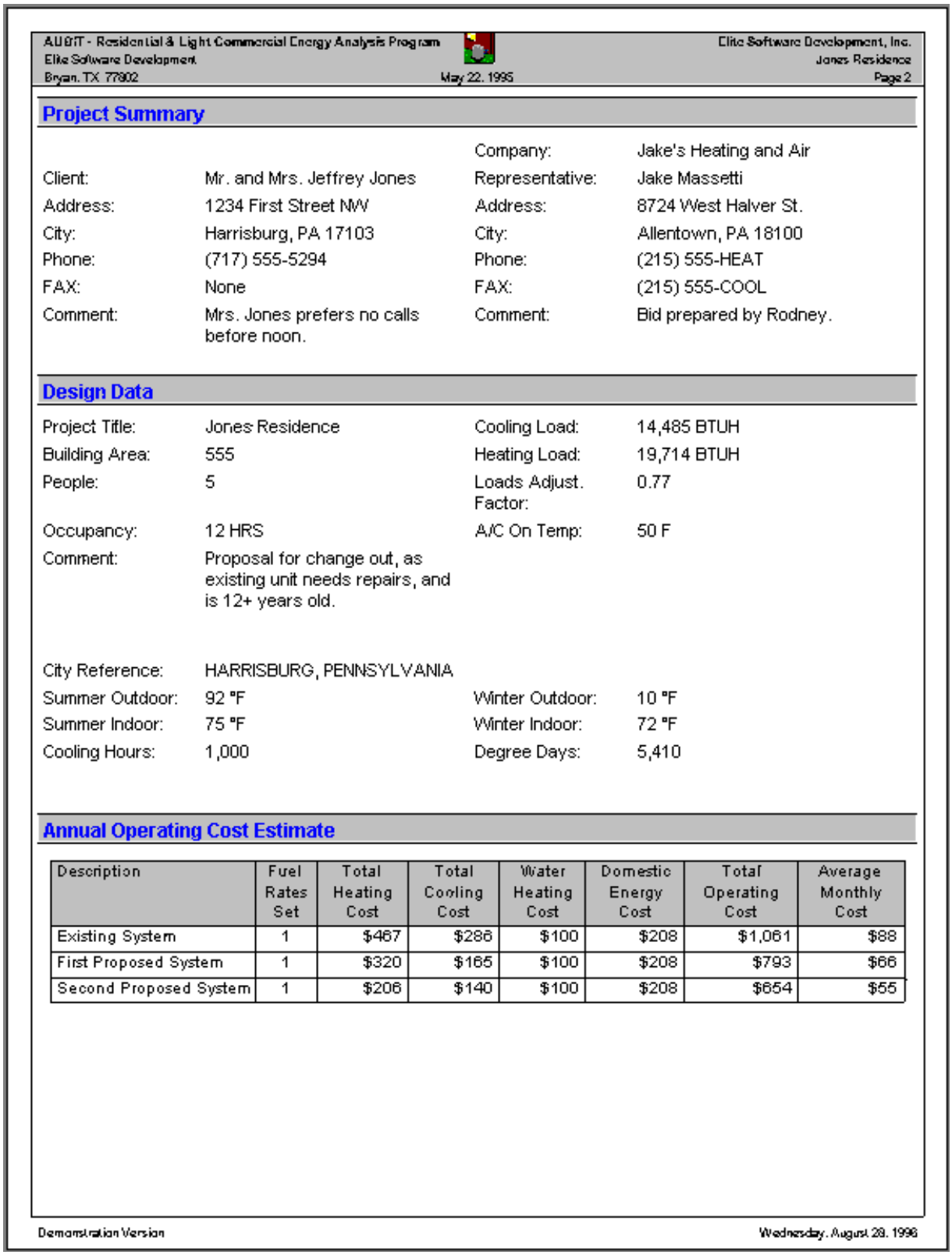
Appliance Report

Appliance Set 1 (continued)

		Estimated Cost
Misc. Appliances		
TV, B&W solid state Usage:	98. KWH	$9
VCR Usage:	62. KWH	$6
Radio, solid state Usage:	24. KWH	$2
Misc. Appliances Subtotal:		$18
Total Annual Appliance Cost:		$208



Sample Report 3



AUDIT - Residential & Light Commercial Energy Analysis Program
Elite Software Development
Bryan, TX 77802

May 22, 1995

Elite Software Development, Inc.
Jones Residence
Page 2

Project Summary

		Company:	Jake's Heating and Air
Client:	Mr. and Mrs. Jeffrey Jones	Representative:	Jake Massetti
Address:	1234 First Street NW	Address:	8724 West Halver St.
City:	Harrisburg, PA 17103	City:	Allentown, PA 18100
Phone:	(717) 555-5294	Phone:	(215) 555-HEAT
FAX:	None	FAX:	(215) 555-COOL
Comment:	Mrs. Jones prefers no calls before noon.	Comment:	Bid prepared by Rodney.

Design Data

Project Title:	Jones Residence	Cooling Load:	14,485 BTUH
Building Area:	555	Heating Load:	19,714 BTUH
People:	5	Loads Adjust. Factor:	0.77
Occupancy:	12 HRS	A/C On Temp:	50 F
Comment:	Proposal for change out, as existing unit needs repairs, and is 12+ years old.		
City Reference:	HARRISBURG, PENNSYLVANIA		
Summer Outdoor:	92 °F	Winter Outdoor:	10 °F
Summer Indoor:	75 °F	Winter Indoor:	72 °F
Cooling Hours:	1,000	Degree Days:	5,410

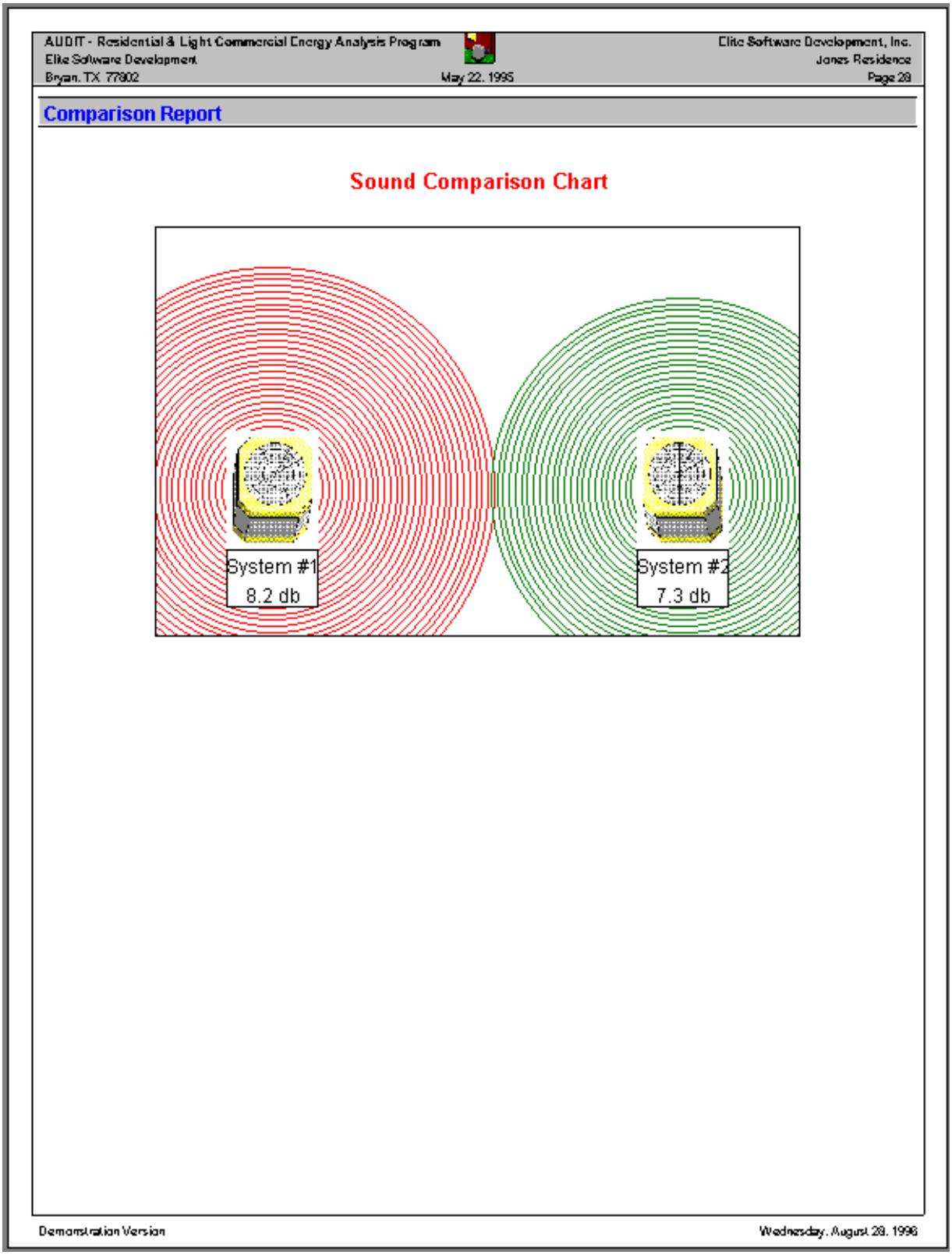
Annual Operating Cost Estimate

Description	Fuel Rates Set	Total Heating Cost	Total Cooling Cost	Water Heating Cost	Domestic Energy Cost	Total Operating Cost	Average Monthly Cost
Existing System	1	$467	$286	$100	$208	$1,061	$88
First Proposed System	1	$320	$165	$100	$208	$793	$66
Second Proposed System	1	$206	$140	$100	$208	$654	$55

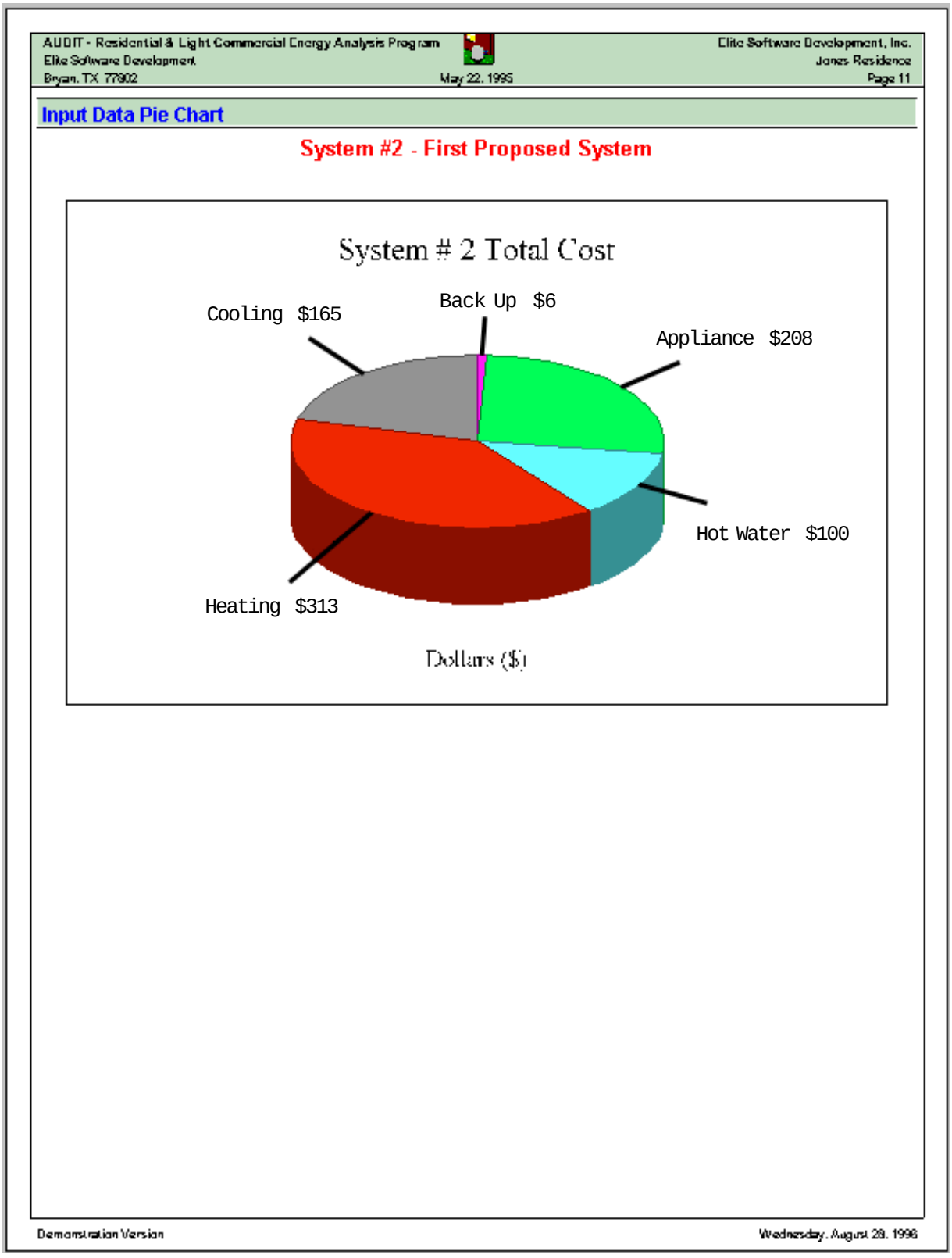
Demonstration Version

Wednesday, August 28, 1996

Sample Report 4



Sample Report 5



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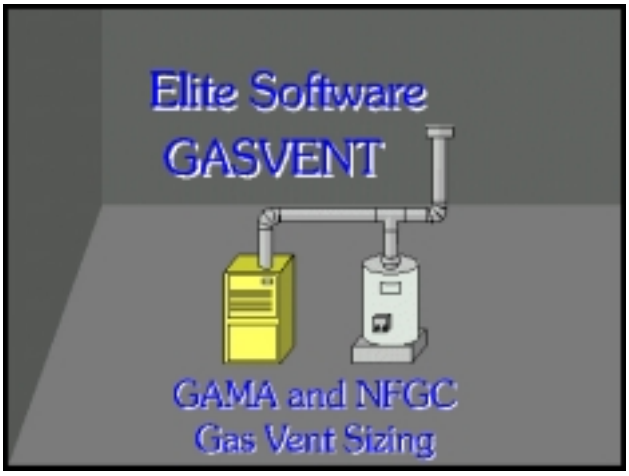
Elite Software GASVENT



The Elite Software GASVENT 2.0 program quickly calculates the correct vent sizes for Category 1 Gas Fired Appliances. GASVENT is a true Windows program designed to be simple and easy to use by both contractors and designers. The program is very graphical and especially easy to use.

Recent advances in technology have improved the average furnace efficiency to over 80%. These new mid and high efficiency furnaces can cause significant condensation in the vent. If a flue gas vent is either oversized, undersized, or of the wrong material, there is a high probability that corrosive condensate will cause pitting which will ultimately result in the failure of the vent pipe. The failure of a vent pipe can be deadly because the building occupants could be subjected to carbon monoxide poisoning. Besides gas poisoning, there are many other hazards from improperly designed vents. Masonry chimneys can collapse from the acid in the condensate dissolving the mortar between bricks and possibly causing a fire. Condensate can accumulate back at the furnace and cause severe rusting. There are so many potential problems with incorrect venting, that all contractors should make every effort to do the job right. GASVENT is a great help in vent design.

Full Windows Capabilities

GASVENT is a true Windows program and offers exceptional productivity gains as it is visually intuitive, permits simultaneous operation of multiple programs and allows the easy exchange of data between programs. The program lets you take full advantage of Windows capabilities like cut and paste editing, high resolution graphics display and exceptionally complete help resources. The program's help features greatly facilitate learning program operation. GASVENT's Windows features allow it to produce a full array of easy to understand reports.

GASVENT Update

Current users of Windows GASVENT 1.50 may update to GASVENT 2.0 for only $49. The primary differences between GASVENT versions 1.5 and 2.0 concern new calculation routines, better handled multi-floor and multi-appliance applications, easier entry of manifolds, updated graphics, and new visually appealing reports. Updated graphics, a new manual, and a new help file make GASVENT 2.0 for Windows the easiest to use gas venting program on the market. Stay in compliance with the National Fuel Gas Code the easy way, with GASVENT for Windows!

GASVENT Features

- Calculates Vent Sizes for Category 1 Gas Fired Appliances
- ***True Windows Program!***
- Follows National Fuel Gas Code and GAMA Procedures
- Sizes Single and Double Wall Metal Vents
- ***Computes Combustion Air Requirements***
- Calculates Acceptable Tile Lined Masonry Chimney Sizes
- Sizes Type B and Single Wall Metal Vent Connectors
- Calculates for Single and Multiple Appliances
- Works for Both Single and Multi Story Buildings
- Allows for Drafthood and Fan Equipped Appliances
- Accommodates any Height and Lateral Dimensions
- ***Graphical, Context Sensitive Help***
- Hypertext Feature Provides Link Between All Help Items

Calculation Method

GASVENT calculates vent sizes based on the vent tables developed by the Gas Research Institute and subsequently published in the 1996 National Fuel Gas Code *by NFPA and the 1991 manual entitled, Venting Tables - Category 1 Central Furnaces,* published by the Gas Appliance Manufacturers Association. All output results produced by GASVENT can be easily verified by hand to conform with results from the vent tables.

Program Input

The GASVENT program uses standard Windows data entry techniques that provide a full screen, simple "fill in the blank" input procedure. All input data is checked at the time of entry so that no improper data can be entered. If you have a question about what the program is requesting, you can press the F1 key for context sensitive help.

Additionally, there is a Hypertext feature that links all help information together. Three major types of data are requested: Customer Information, Single Appliance, and Multiple Appliances. The customer information includes the customer name, address, city, state, and phone number. A single appliance requires the appliance description (furnace, water heater, etc.), input MBH rating, vent lateral and height dimensions, outlet diameter, vent connector type, specification of natural or fan assisted draft, vent type (masonry, flexible liner, or Type B), and the number of elbows.

The same data is requested for each appliance in multiple appliance situations. Multiple appliance scenarios also allow the entry of a "floor" number for multi story buildings. All data is saved to disk and can be reviewed and edited whenever desired. Input sheets are provided for the easy organization of your data.

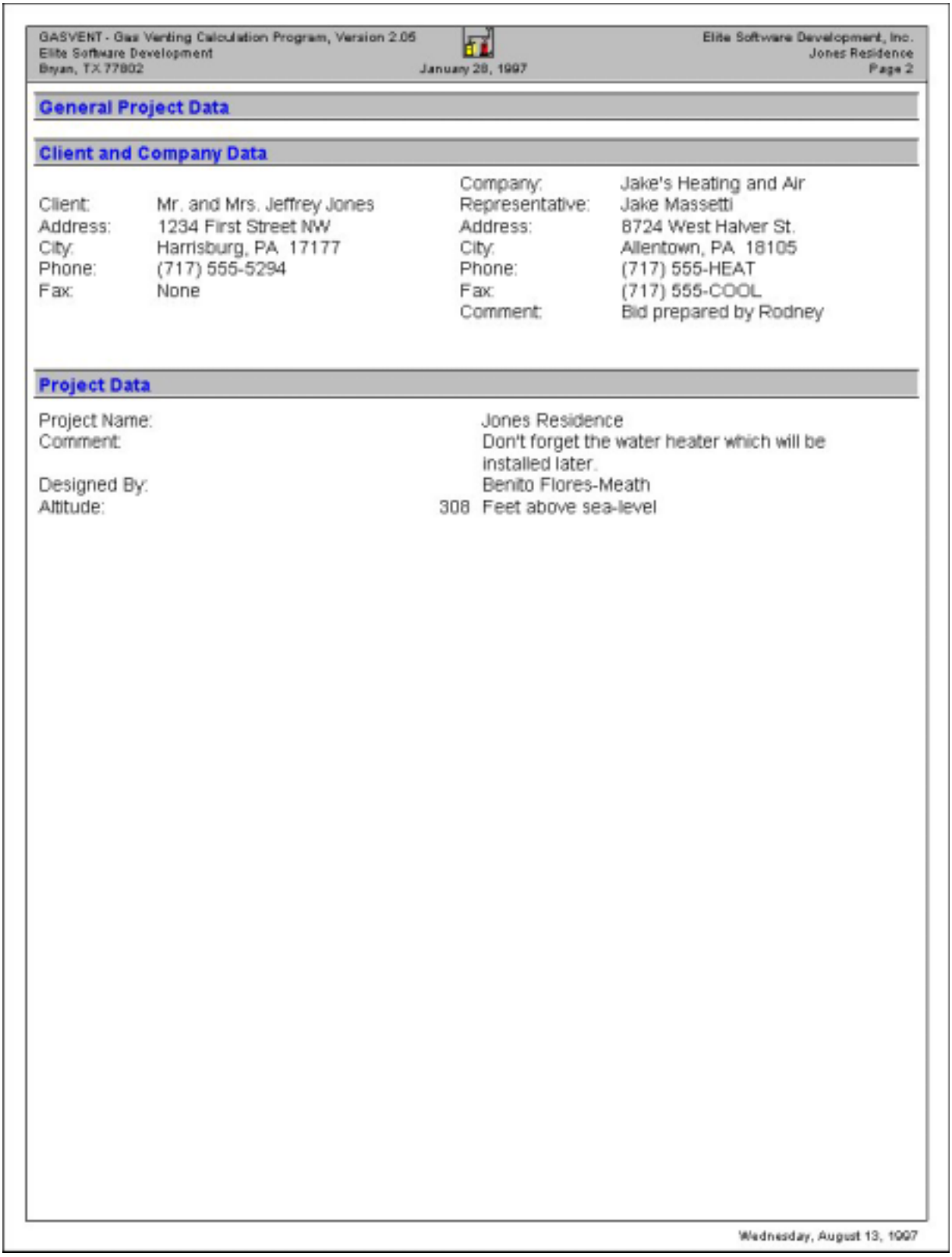
Program Output

Output results from GASVENT are shown on each input data screen and can be printed whenever desired. Reports can be both previewed on screen or printed. Both Draft and Proof quality reports can be printed. Shown below are sample reports and screens from GASVENT program.

System Requirements

GASVENT requires an IBM PC compatible computer equipped with at least 8 megabytes of memory and Microsoft Windows 3.1 or higher.

General Project Data Report



GASVENT - Gas Venting Calculation Program, Version 2.05
Elite Software Development
Bryan, TX 77802

January 28, 1997

Elite Software Development, Inc.
Jones Residence
Page 2

General Project Data

Client and Company Data

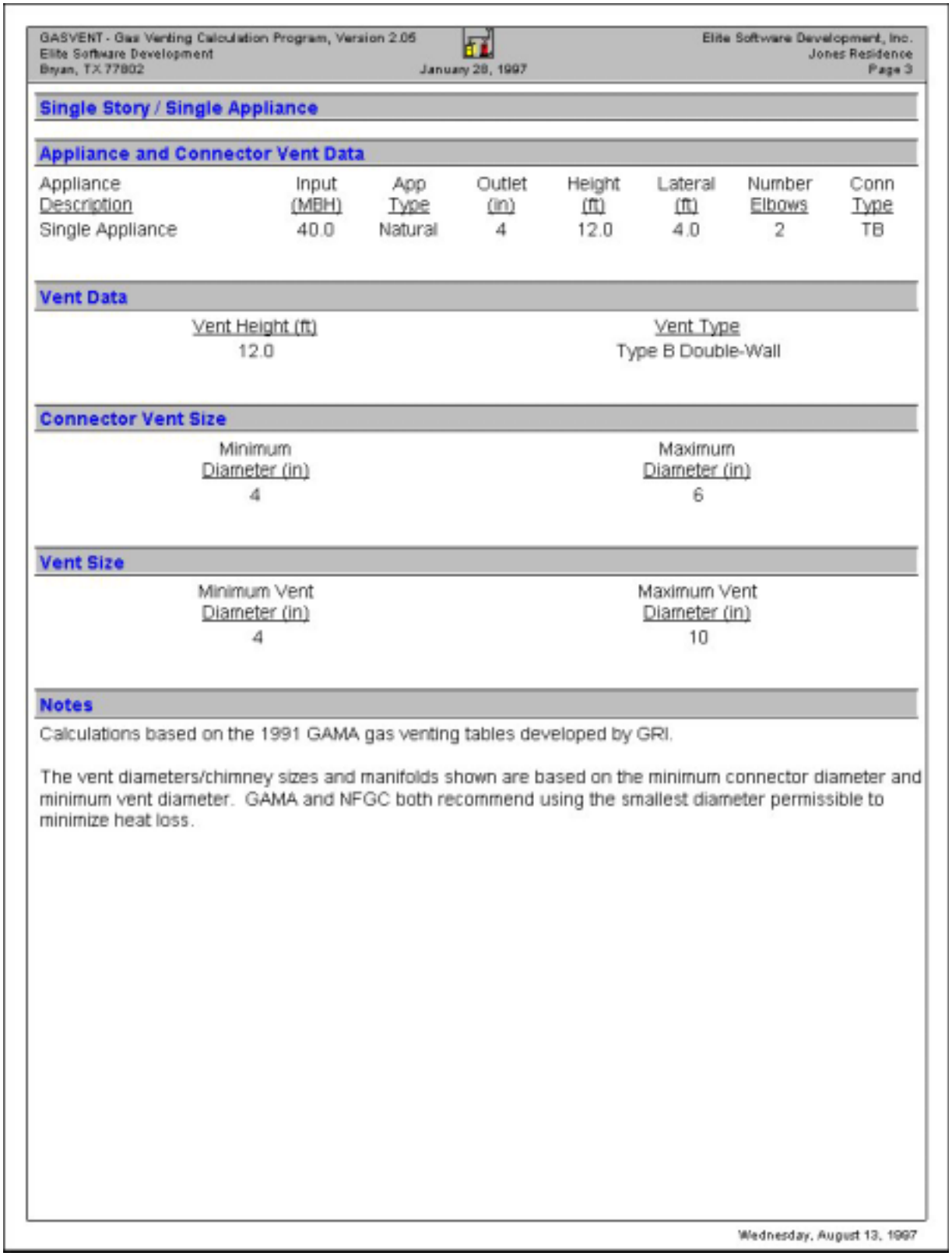
Client:	Mr. and Mrs. Jeffrey Jones	Company:	Jake's Heating and Air
Address:	1234 First Street NW	Representative:	Jake Massetti
City:	Harrisburg, PA 17177	Address:	8724 West Halver St.
Phone:	(717) 555-5294	City:	Allentown, PA 18105
Fax:	None	Phone:	(717) 555-HEAT
		Fax:	(717) 555-COOL
		Comment:	Bid prepared by Rodney

Project Data

Project Name:		Jones Residence
Comment:		Don't forget the water heater which will be installed later.
Designed By:		Benito Flores-Meath
Altitude:	308	Feet above sea-level

Wednesday, August 13, 1997

Single Story / Single Appliance Report



GASVENT - Gas Venting Calculation Program, Version 2.05
Elite Software Development
Bryan, TX 77802

January 28, 1997

Elite Software Development, Inc.
Jones Residence
Page 3

Single Story / Single Appliance

Appliance and Connector Vent Data

Appliance Description	Input (MBH)	App Type	Outlet (in)	Height (ft)	Lateral (ft)	Number Elbows	Conn Type
Single Appliance	40.0	Natural	4	12.0	4.0	2	TB

Vent Data

Vent Height (ft)	Vent Type
12.0	Type B Double-Wall

Connector Vent Size

Minimum Diameter (in)	Maximum Diameter (in)
4	6

Vent Size

Minimum Vent Diameter (in)	Maximum Vent Diameter (in)
4	10

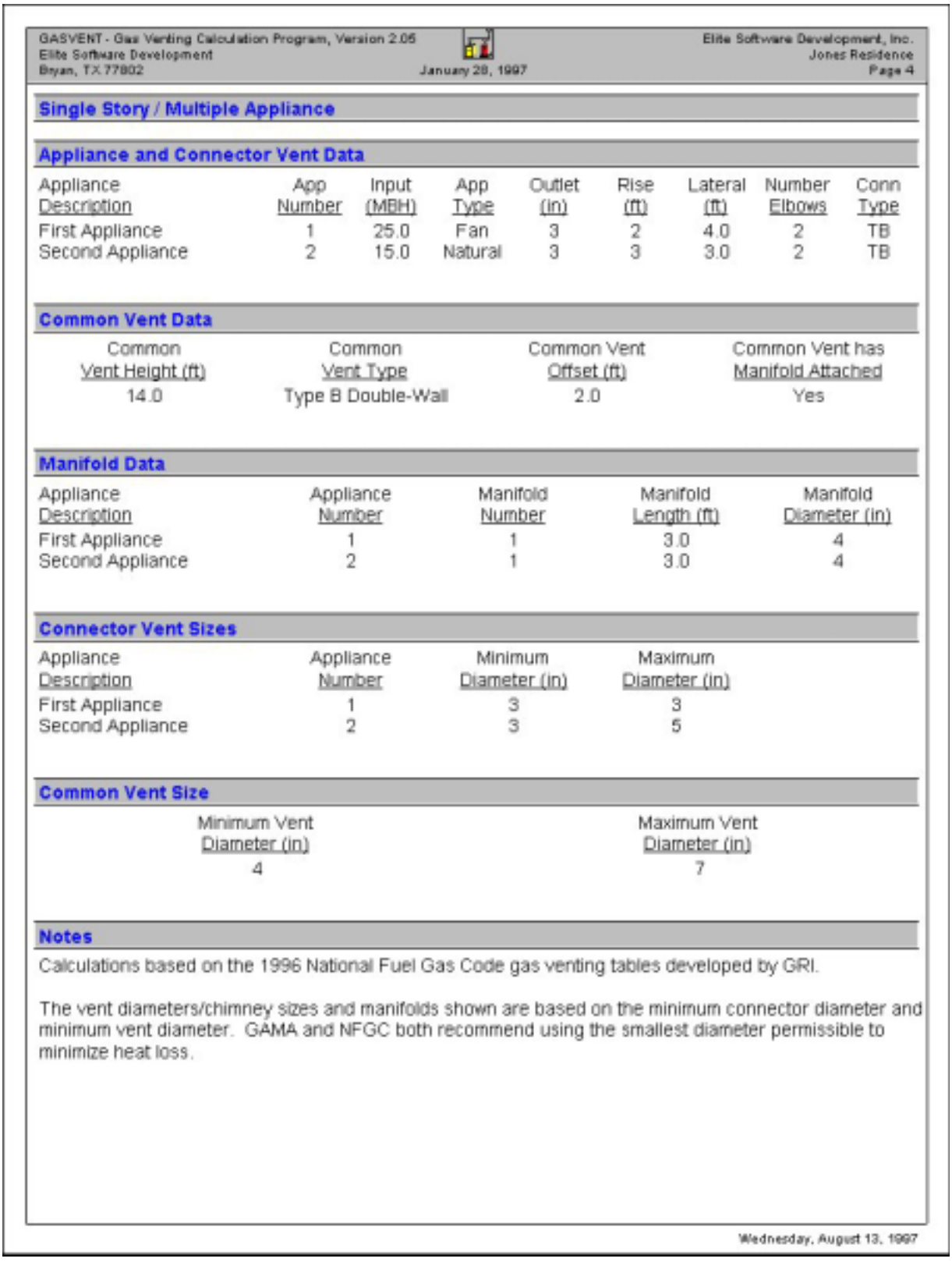
Notes

Calculations based on the 1991 GAMA gas venting tables developed by GRI.

The vent diameters/chimney sizes and manifolds shown are based on the minimum connector diameter and minimum vent diameter. GAMA and NFGC both recommend using the smallest diameter permissible to minimize heat loss.

Wednesday, August 13, 1997

Single Story / Multiple Appliance
(Multiple Story / Multiple Appliance is Similar)



GASVENT - Gas Venting Calculation Program, Version 2.05
Elite Software Development
Bryan, TX 77802

January 28, 1997

Elite Software Development, Inc.
Jones Residence
Page 4

Single Story / Multiple Appliance

Appliance and Connector Vent Data

Appliance Description	App Number	Input (MBH)	App Type	Outlet (in)	Rise (ft)	Lateral (ft)	Number Elbows	Conn Type
First Appliance	1	25.0	Fan	3	2	4.0	2	TB
Second Appliance	2	15.0	Natural	3	3	3.0	2	TB

Common Vent Data

Common Vent Height (ft)	Common Vent Type	Common Vent Offset (ft)	Common Vent has Manifold Attached
14.0	Type B Double-Wall	2.0	Yes

Manifold Data

Appliance Description	Appliance Number	Manifold Number	Manifold Length (ft)	Manifold Diameter (in)
First Appliance	1	1	3.0	4
Second Appliance	2	1	3.0	4

Connector Vent Sizes

Appliance Description	Appliance Number	Minimum Diameter (in)	Maximum Diameter (in)
First Appliance	1	3	3
Second Appliance	2	3	5

Common Vent Size

Minimum Vent Diameter (in)	Maximum Vent Diameter (in)
4	7

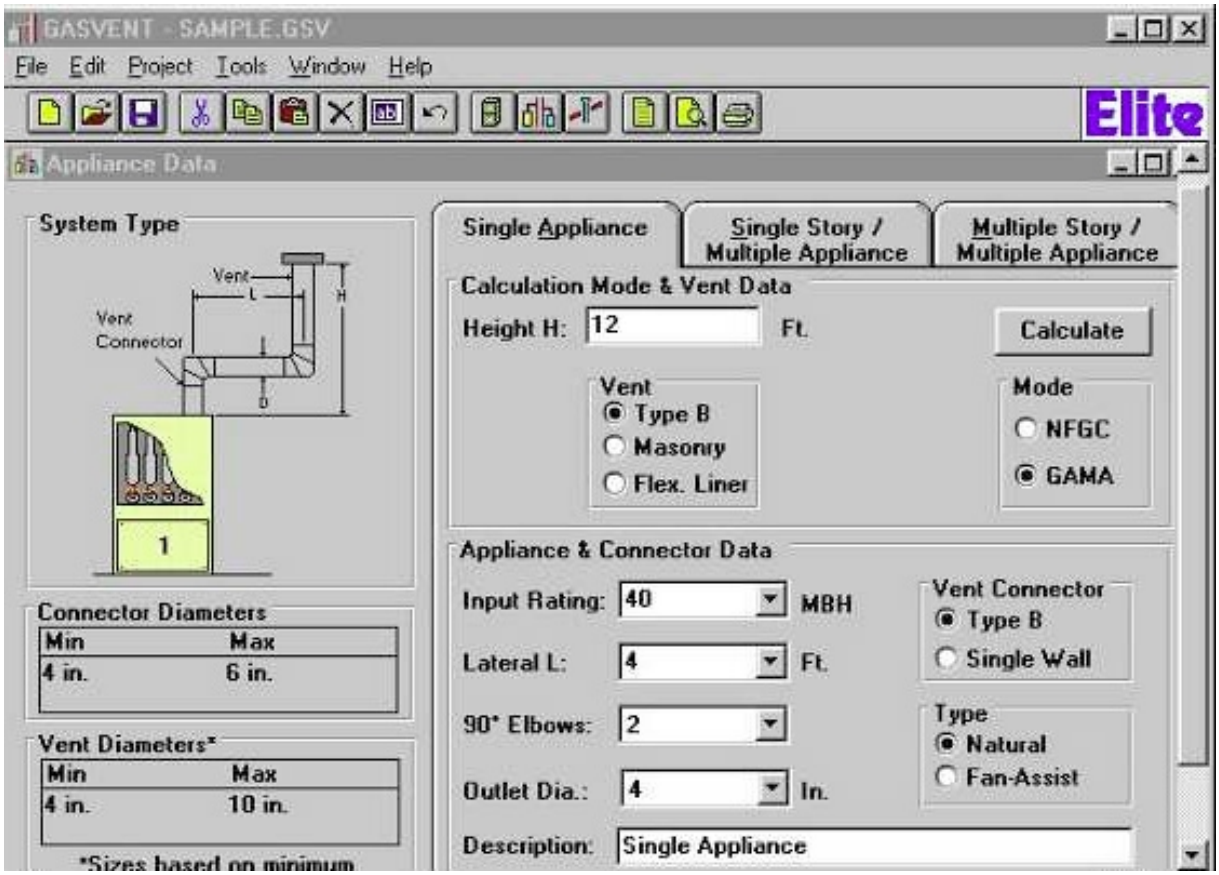
Notes

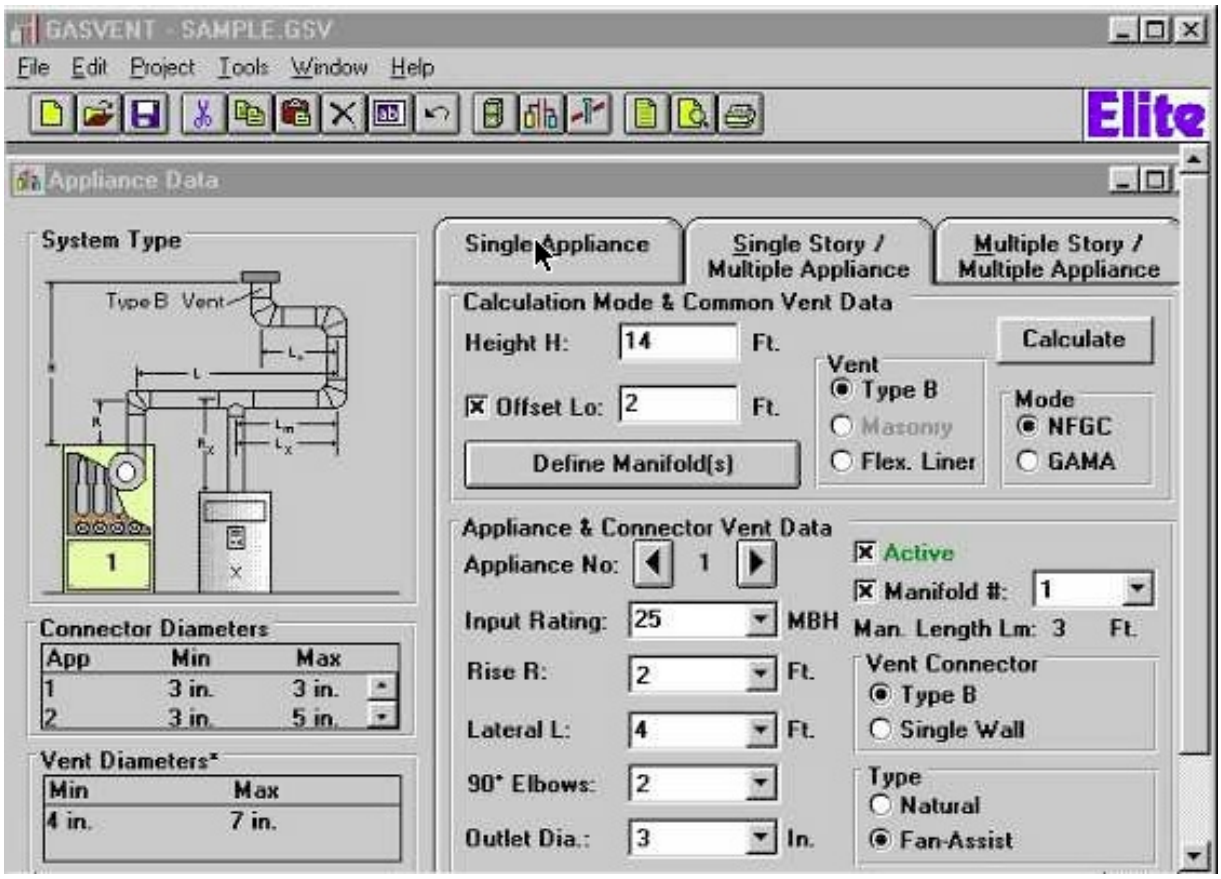
Calculations based on the 1996 National Fuel Gas Code gas venting tables developed by GRI.

The vent diameters/chimney sizes and manifolds shown are based on the minimum connector diameter and minimum vent diameter. GAMA and NFGC both recommend using the smallest diameter permissible to minimize heat loss.

Wednesday, August 13, 1997

Sample Appliance Data Input Screens





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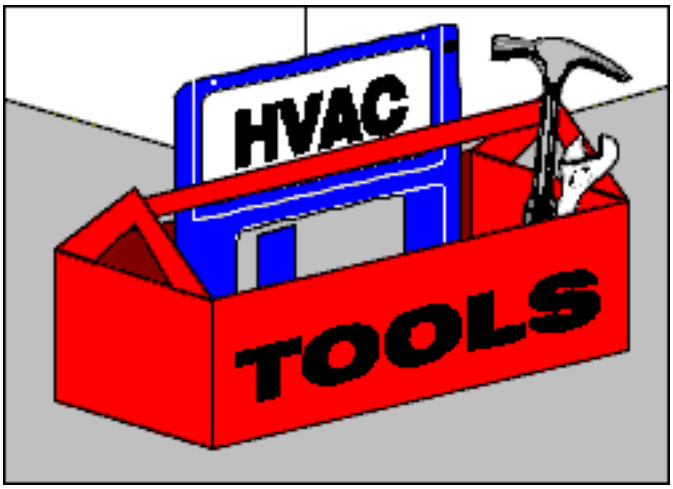
Elite Software
HVAC Tools



The Elite Software HVAC Tools program allows the quick calculation of **13 common HVAC design tasks.** These tasks include duct sizing, wire sizing, three way coil interpolation, mixed air and state point psychrometrics, fan curve and cost analysis, U-Factor calculations, natural gas pipe sizing, refrigeration line sizing, general pipe sizing, hot/chilled water pipe analysis and the quick look-up of common HVAC formulas and conversion factors. HVAC Tools is designed to be used as a quick utility for calculating these common tasks. Minimal input is required for each function and results are instantly displayed on the same screen as the input data. Some of the functions in HVAC Tools are also covered by other Elite programs. For example, duct sizing is done on a system wide basis for multiple duct sections at a time in DUCTSIZE. The Tools program just sizes one duct at a time in order to minimize the data entry required. The same situation exists with psychrometrics, pipe sizing, and wire sizing. Elite has other programs you may want to consider that address those applications on a complete system basis. HVAC Tools is a simple and easy to use Windows programs designed for both engineers and contractors. A lower priced DOS version of Tools is also still available.

System Requirements

HVAC Tools requires a computer equipped with at least 8 meg of memory and Microsoft Windows 3.1 or higher.

Calculation Method

All HVAC related items in the HVAC Tools program follow the methodology described in the 1997 ASHRAE Handbook of Fundamentals. The wire sizing procedures are based on the 1997 National Electric Code. All results computed by the HVAC Tools program can be easily verified by hand.

Program Output

Output information from HVAC Tools can be seen on each input data screen and printed whenever desired. There is also provision for printing a cover sheet for the output report of any function of HVAC Tools. Shown below are sample input screens with output data for several functions.

HVAC Tools Features

- Automates 13 Common HVAC Design Tasks
- ***True Windows Program! (Dos Version Available)***
- Follows ASHRAE and NEC Procedures
- Sizes Round and Rectangular Duct Sections
- Sizes Wire Based on Ampacity and % Voltage Drop
- Sizes Pipes and Refrigerant Lines
- Performs Fan Curve and Cost Analysis
- Performs Mixed Air and State Point Psychrometrics
- Performs Three Way Interpolation of HVAC Units
- Automatic U-Factor Calculations for Roofs, Walls, etc.
- Hot and Chilled Water Pipe Sizing and Analysis
- High and Low Pressure Natural Gas Pipe Sizing
- Quick Look-Up of Common HVAC Formulas
- ***Provides Comprehensive and Concise Reports***

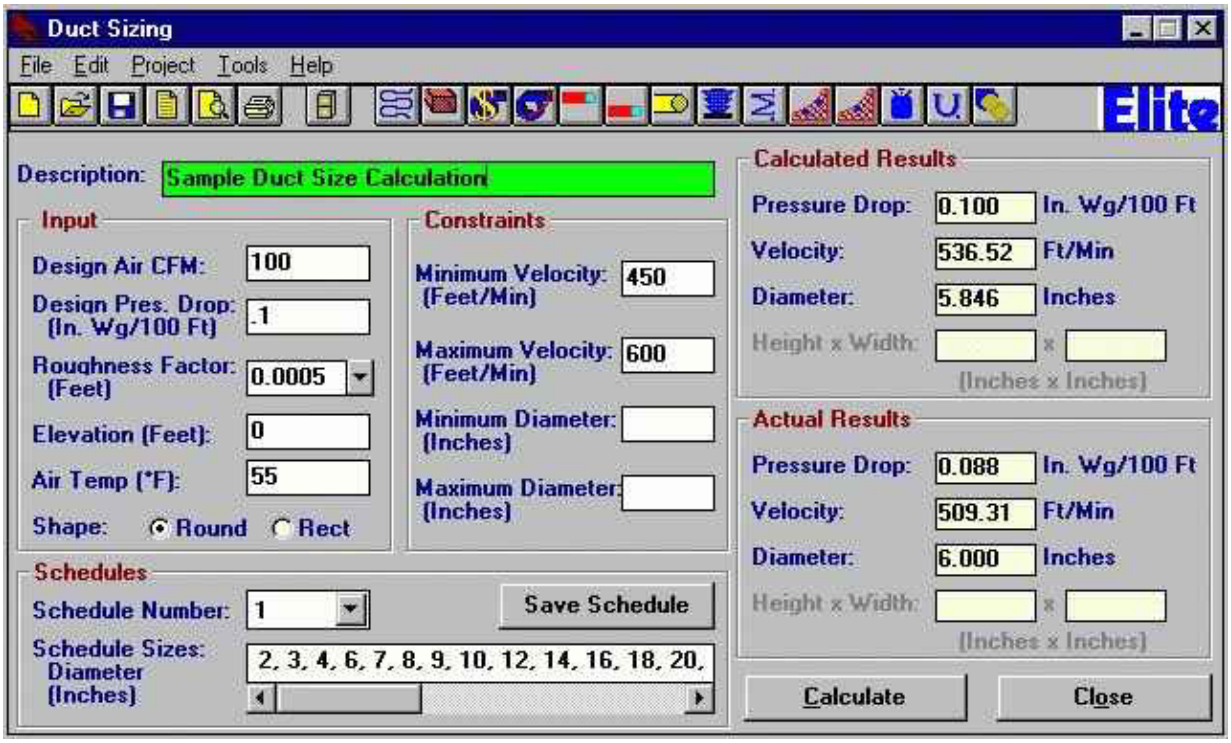
Program Input

The HVAC Tools program is a true Windows program and as such it operates in standard Windows fashion complete with toolbars and hyperlinked help All input data is checked at the time of entry so that no improper data can be entered. Each function of Tools requires only one screen of input data. Most functions require only a few items of input data. Others, like the HVAC Formula look-up, require almost no input data.

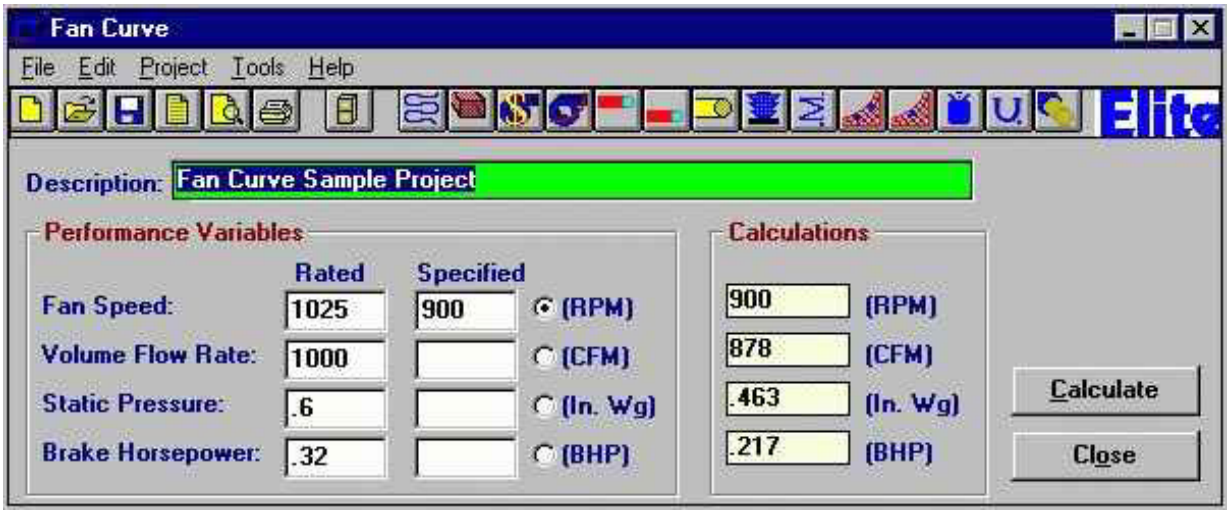
The Duct Size function, for example, requires the length of the duct, the cfm of air carried by the duct, the desired pressure loss per 100 feet of duct, and the material of the duct. There is also provision for entering height and width constraints along with minimum and maximum velocity constraints. The Refrigeration Line Sizing function requires refrigerant type, tonnage, temperatures, pipe lengths and type.

The Psychrometric function requires only two conditions to determine all other properties of air for a given state. The Fan Curve Analysis only requires any two of the following inputs: fan rpm, cfm, static pressure, or brake horsepower. The Wire Sizing function requires the load in either amps, horsepower, or kva. Given the voltage, wire length, material (aluminum or copper) and conduit type, Tools sizes the smallest wire that does not exceed NEC ampacity ratings or the user specified allowable % voltage drop.

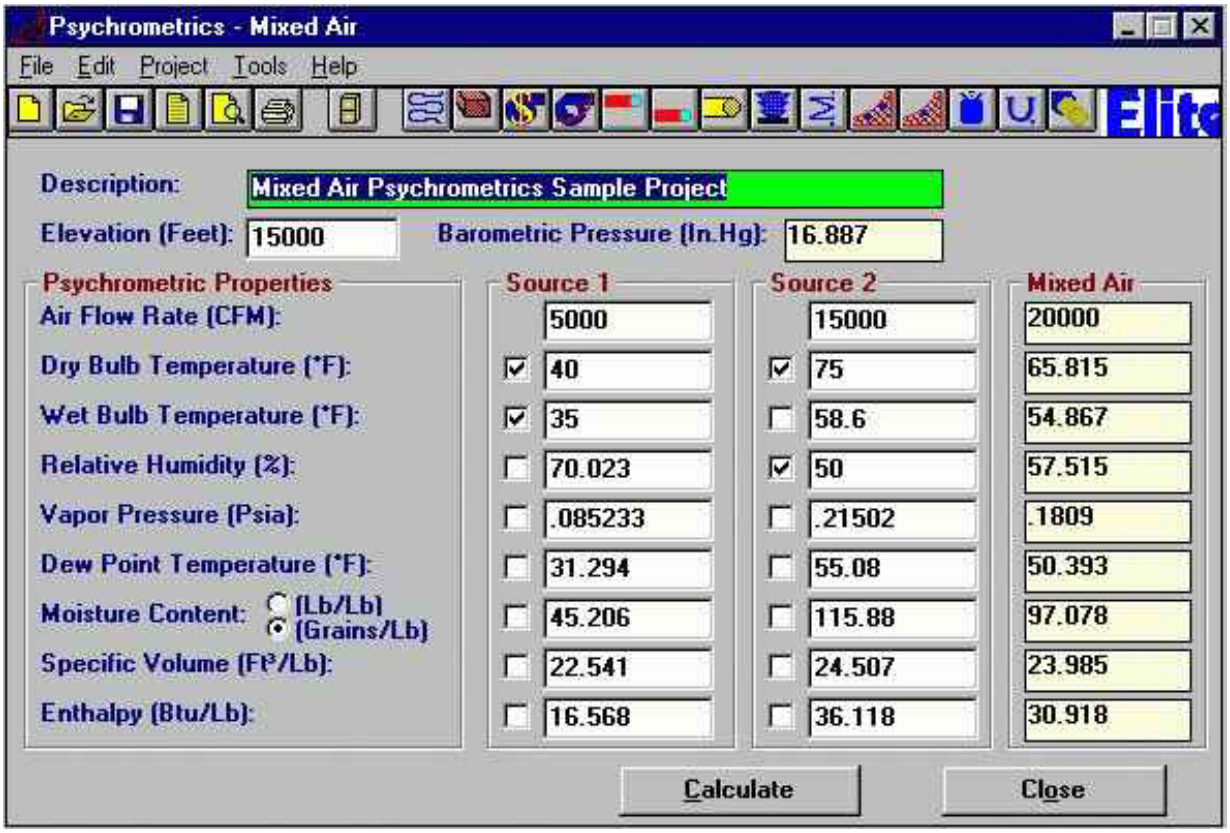
Ductsizing



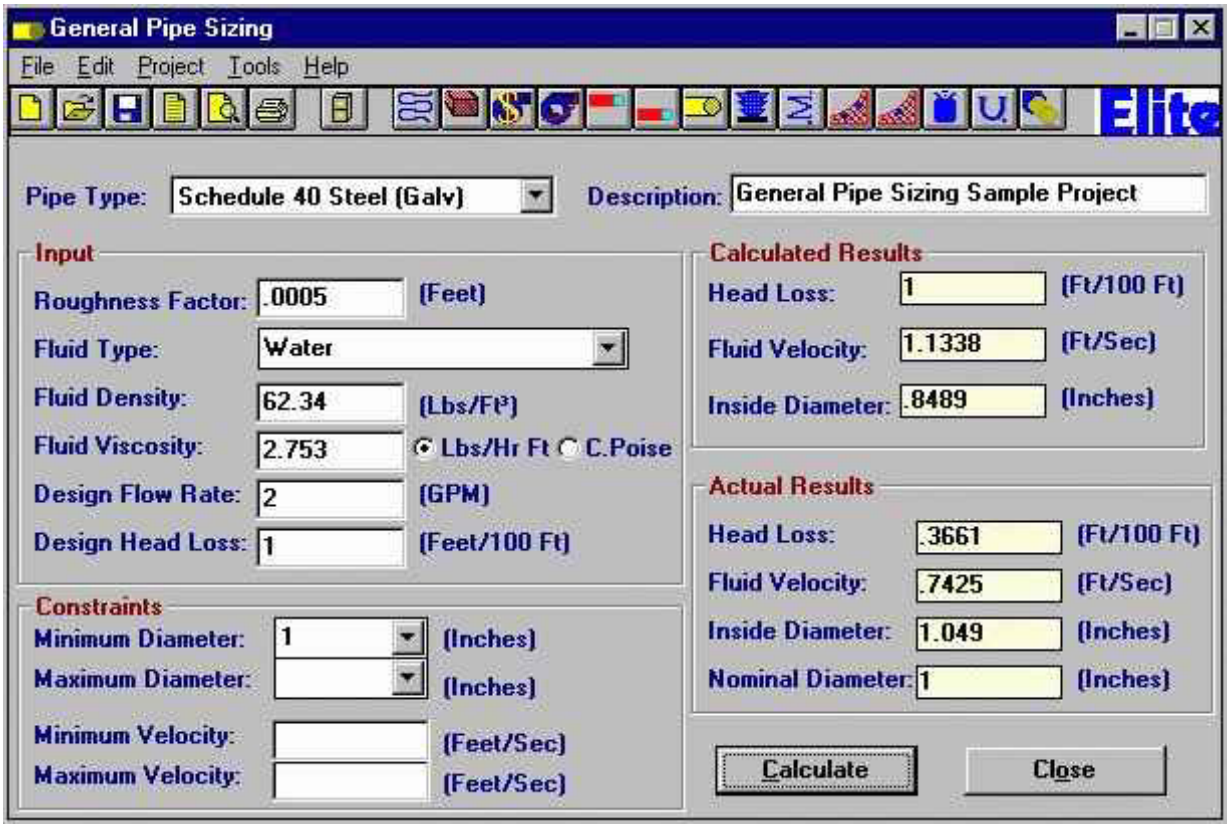
Fan Curve Analysis



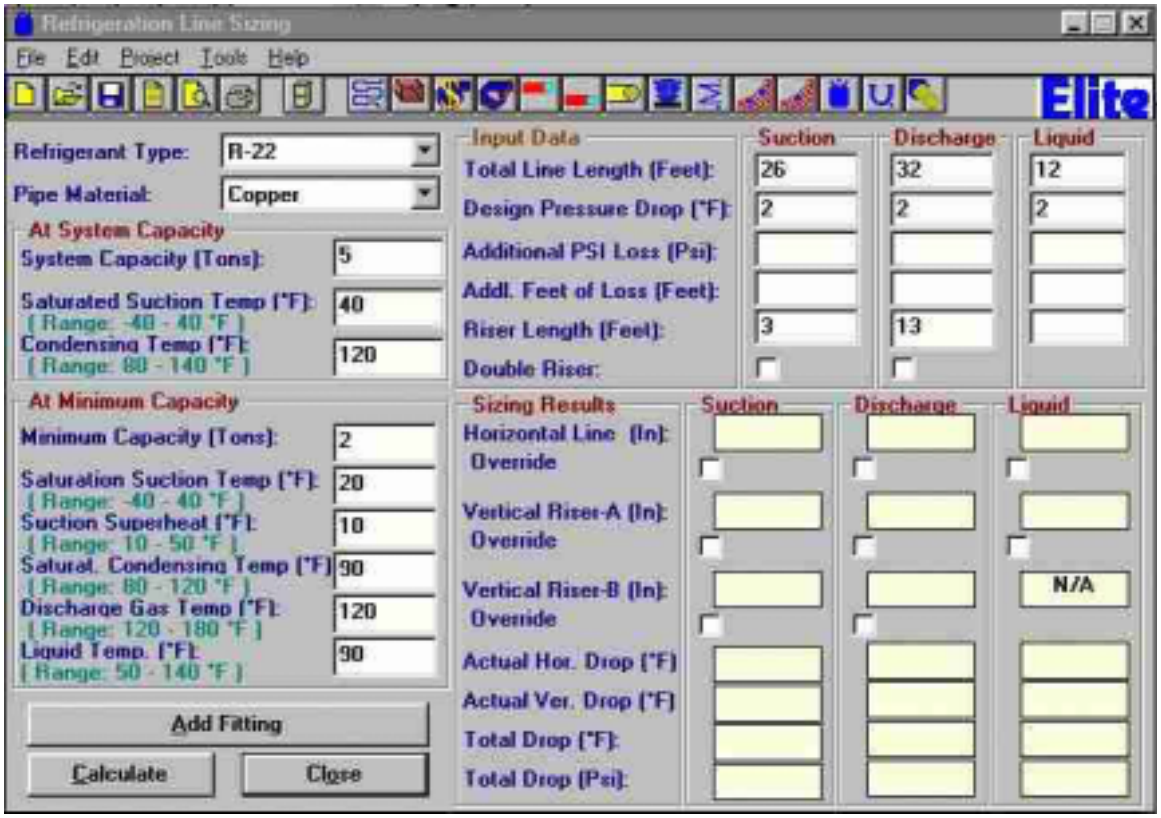
Mixed Air Psychrometrics



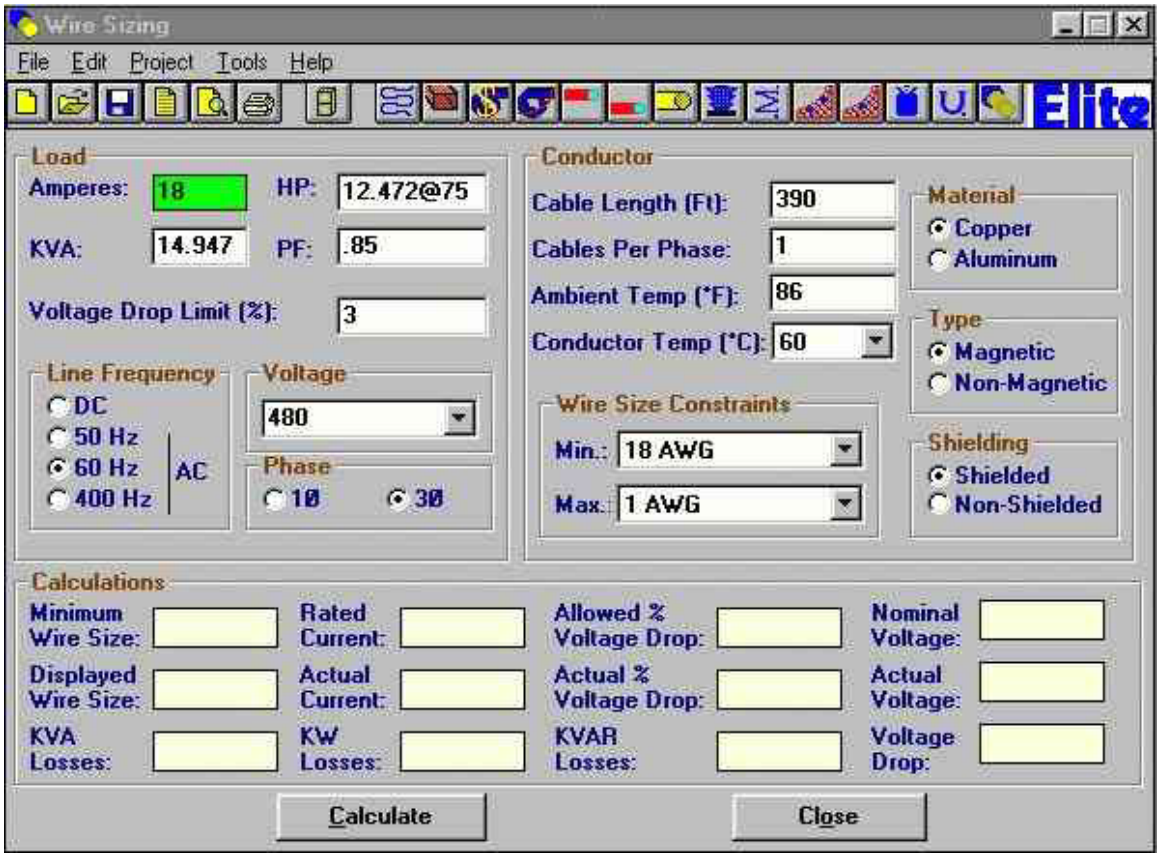
Pipe Sizing



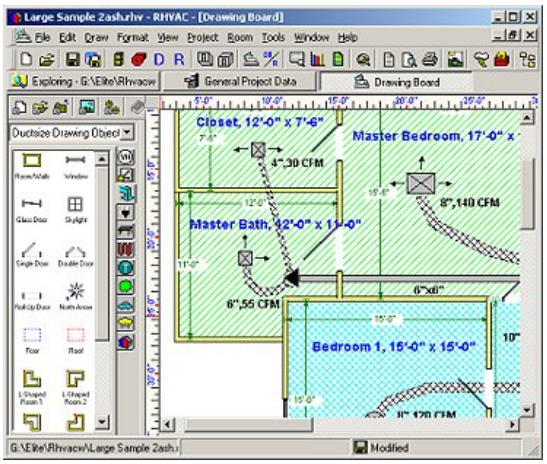
Refrigeration Line Sizing



Wiresizing



Elite Software
Drawing Board



DRAWING BOARD is a fast and simple program for drawing floor plans and ductwork. Drawings can be quickly created by dragging and dropping drawing objects from the built-in object catalogs onto the drawing window. The drawing objects in Drawing Board are pre-programmed shapes such as entire room shapes, walls, doors, windows, and ductwork. These are intelligent objects that contain data useful for the CHVAC, RHVAC, and Ductsize programs. Soon, several other Elite Software programs will also include a Drawing Board window, each one having its own new, custom catalog of intelligent objects.

Drawing Board costs only $495 and it can run as either a stand-alone program or as an integrated component within other Elite Software programs such as RHVAC, CHVAC, and DUCTSIZE. If you buy Drawing Board, it automatically becomes enabled inside of all programs you have from Elite that relate to Drawing Board. For example, if you own both RHVAC and Drawing Board, you can sketch the floor plan of a project on the drawing window of RHVAC and calculations will automatically be performed right from the floor plan you create. You can also draw the ductwork for the project on the Drawing Board window in RHVAC, which you can either size manually from within RHVAC, or you can open the same drawing in DUCTSIZE and let that program calculate all the duct sizes for you automatically.

A demonstration version of Drawing Board is included with each program that includes the Drawing Board window. As an example of the demonstration limits of the Drawing Board window, in RHVAC you can draw as large a floor plan as you like, but the load calculations will only be done for the first three rooms you draw, and the rooms will be limited to certain dimension restrictions. Once you purchase a license for Drawing Board, the drawing window will be 'unlocked' and load calculations can be done for all the rooms you draw on a drawing, no matter how large the rooms are.

DRAWING BOARD ADVANCED FEATURES

Professional Appearance: Drawing Board uses full color, detailed, double line shapes for walls, windows, doors, and ductwork. This gives the drawing a much more professional appearance than simplistic single line representations.

Realistic Ductwork: Drawing Board shows ductwork completely realistic with bends, curves, and fittings just like you have to install it. Duct board and sheet metal shows as solid grey or any color

you like. Flex duct even looks like flex duct. Each duct section is shown on the drawing with its size and cfm, perfect for giving to the installer. Return duct sections appear just as nice and can be given a different color from the supply duct. Far superior to simplistic right angle stick drawings used for ductwork in other drawing systems.

Realistic Duct Fittings: Drawing Board can show realistic double line duct fittings that can be given any color. These fittings accurately depict what will actually be installed and make for specification quality drawings.

Register/Diffuser Options: Drawing Board offers both round, oval, and rectangular registers that can be specified to any size, shape, and color you like. Flow arrows can also be specified to indicate one way, two way, three way, and four way operation.

Full Precision: Drawing Board allows very precise control of line lengths and areas. No need to worry about rounding errors and unwanted shifting of objects due to lack of precision. You can set the grid and “snap to” setting to any precision desired.

Undo: If you make a mistake while drawing, click Undo to backtrack your changes. The Undo dialog shows you a preview that helps you to choose precisely how many of your changes to undo. You can undo a single change or go as far back in the current drawing session as you like.

Dimensions: Drawing Board provides accurate, easy-to-place dimension lines for all aspects of the drawing. All types of English and metric units are provided.

Room Shapes: Drawing Board allows rooms with any number of walls and odd angles desired. The basic rectangular room shape can be modified as desired or select from eleven standard room shapes to save even more time.

Individual Walls: All walls drawn with Drawing Board are individually selectable. Each wall can have its own material type, R value, orientation, and other properties related to HVAC load calculations. This also makes it very easy to define a partition wall separate from an exterior wall.

Door Options: Doors can be drawn with any degree of opening and swing arc desired. Hinge side and swing direction are easily selectable and changeable.

Floors and Layers: Drawing Board allows multiple story floor plans by using the concept of a sheet to represent each floor and layers to contain different types of objects per floor.

Rooms, Zones, and Systems Colors: Rooms can be assigned to zones and zones can be assigned to air handler systems that make up the building. Drawing Board allows room and zone areas to

have different background colors so that it is easy to distinguish them.

Zoom and Pan: Drawing Board provides numerous dynamic zooming and panning tools.

Scaling: Drawing Board allows setting the size of the drawing page and includes all the standard architectural sheet sizes and scales, thus providing an accurate "WYSIWYG" picture of what the drawing will look like while you are still working in the editing mode.

Printer Options: Drawing Board can print a floor plan on regular 8.5 x 11 paper or any size paper your printer or plotter will allow.

Large Drawings: Drawing Board can also print a large drawing over multiple sheets of paper when the drawing is larger than the printer's standard paper size.

Appearance Control: Drawing Board gives custom control over the appearance of all drawing objects and layers. You can change settings like the line type, color, and shadow if desired. All text can be specified with any font style and point size desired.

North Arrow: Drawing Board provides an intelligent "north arrow" object that can be set to any direction desired and which controls the orientation assigned to all walls and windows.

Borders, Title Blocks and Notes: Drawing Board makes it easy to create custom borders, title blocks, revision clouds, and callout notes.

Standard Shapes: Drawing Board offers lots of standard drawing shapes including polygons, polylines, lines, rectangles, ellipses, arcs, text, rounded rectangles, and pie and chord objects. Use these to outline patios, flowerbeds, sidewalks and even create objects for custom object catalogs.

Customizable Toolbars: Drawing Board uses five toolbars which can be fully customized and located wherever desired.

Calculation Links: Drawing Board works with Elite's CHVAC, RHVAC, and DUCTSIZE programs and soon it will link with FIRE and other Elite programs as well.

Object Catalogs: Drawing Board has a collection of drawing objects to supplement projects.

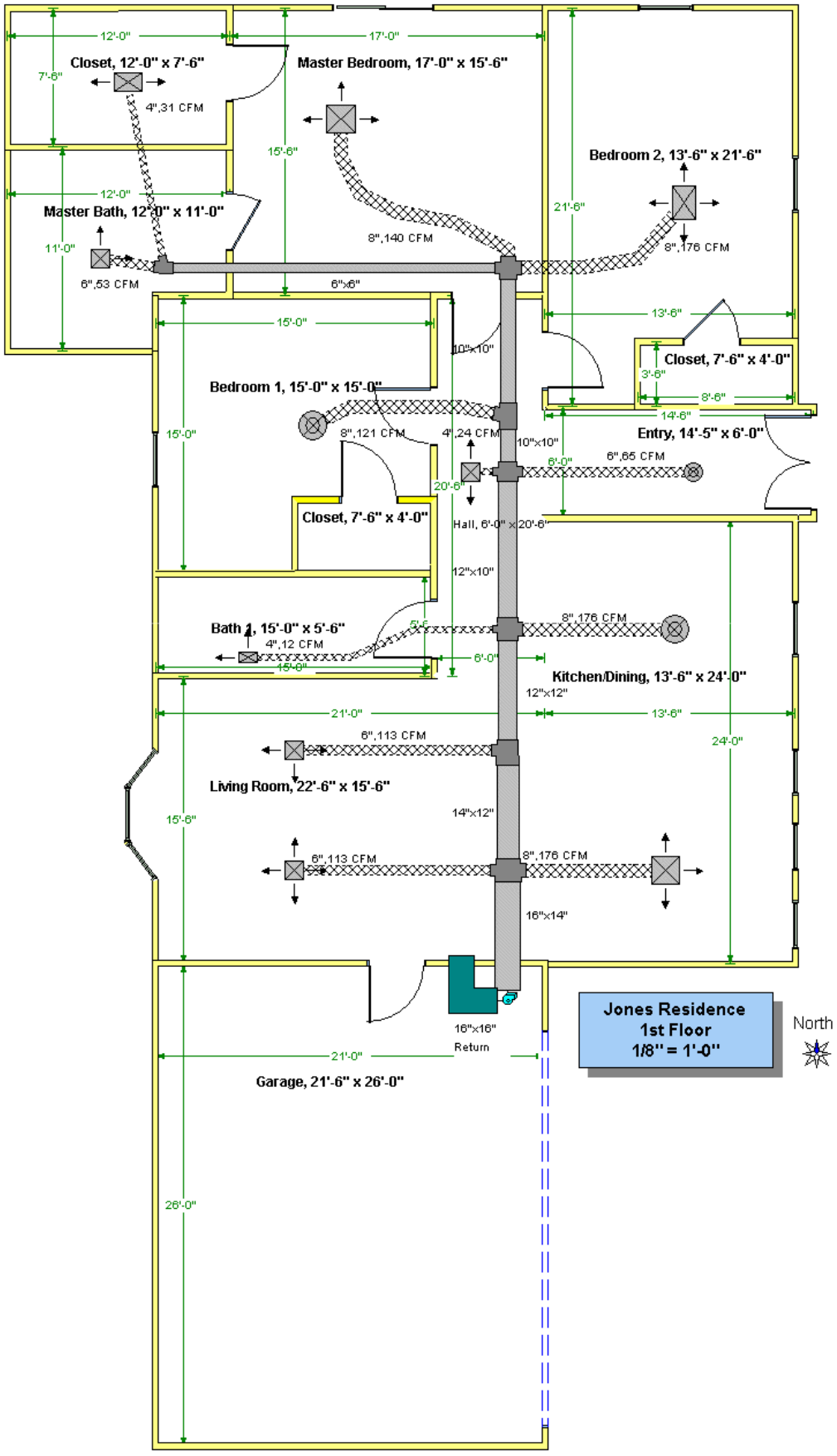
Objects include heating equipment (boilers, radiators, hydronic floor tubing, panels, etc.), appliances (washers, dryers, refrigerators, etc.), furniture (sofas, chairs, tables, etc.), plumbing fixtures (sinks, bathtubs, showers, etc.), electrical (outlets, switches, lights, etc.), landscaping (trees, shrubs, flowers, etc.) and many more objects.

A basic use of Drawing Board is to create floor plans so that hvac load calculations can be performed from the plans with RHVAC and CHVAC. Duct work can be drawn and manually sized using RHVAC and Drawing Board, or automatically sized by using DUCTSIZE.

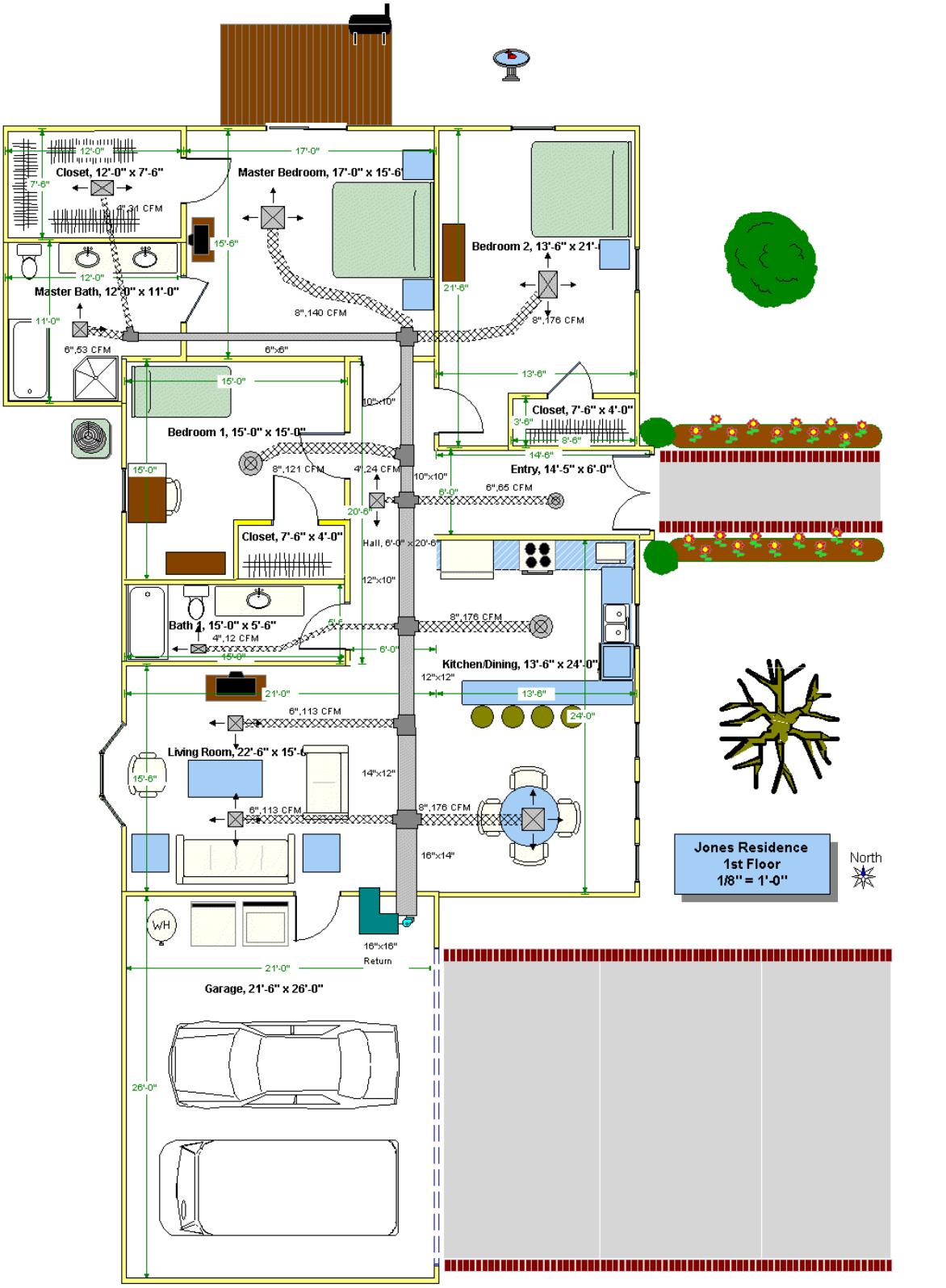
SYSTEM REQUIREMENTS

Our Windows software applications are compatible with all Windows Operating Systems (Windows 95, 98, ME, NT 4.0, 2000, and XP). The minimum hardware requirements to run our application are the same as the minimum hardware requirements to run the operating system which the application is installed on. Additionally, 32MB of RAM and 10 MB of hard disk space is recommended to run DRAWING BOARD.

The latest updates for RHVAC, CHVAC, and Ductsize each include a built-in Drawing Board window that works at the demonstration level. It lets you create floor plans or duct layouts of unlimited size, but calculations will only be done on the first few rooms, zones, or ducts you draw (3 rooms in RHVAC, 2 zones in CHVAC and 6 trunks, 6 runouts in Ductsize). Once you purchase a Drawing Board license, these limitations on the drawing are removed.


Closet, 12'-0" x 7'-6"
Master Bedroom, 17'-0" x 15'-6"
Bedroom 2, 13'-6" x 21'-6"
Master Bath, 12'-0" x 11'-0"
Bedroom 1, 15'-0" x 15'-0"
Closet, 7'-6" x 4'-0"
Entry, 14'-5" x 6'-0"
Hall, 6'-0" x 20'-6"
Bath 1, 15'-0" x 5'-6"
Kitchen/Dining, 13'-6" x 24'-0"
Living Room, 22'-6" x 15'-6"
Garage, 21'-6" x 26'-0"
Jones Residence
1st Floor
1/8" = 1'-0"
North

Drawing Board can be used for more than just drawing basic floor plans and duct systems. The drawing below illustrates using Drawing Board to embellish a drawing complete with furniture, appliances, landscape items, and even cars in the garage. All the objects in the drawing below were just dragged and dropped into place. It is very easy to win more clients by offering full architecturally correct drawings.



Elite Software
Proposal Maker

Proposal maker documents show your customers that you've done your homework. And that builds confidence and trust in you, which generates sales. They want to know that you've calculated the heating and cooling loads for their house, carefully selected equipment that will make them comfortable as well as save them money, and that you'll stand behind your work. Start using Proposal Maker today, and give your customers - and prospective customers - powerful literature that makes an impact.

Features

- Works as a component within Energy Audit and Rhvac programs.
- Creates professional sales proposals linked to calculation results.
- Works for both commercial and residential applications (Proposal Maker in Chvac coming soon).
- Creates custom packets with multiple documents including credit applications, referral letters, and equipment pictures and descriptions.
- Completely customizable with many pre-built styles.
- Includes a large library of pictures from numerous HVAC equipment manufacturers (with energy audit program).
- Easily add, scale, and place your own pictures.
- Mix graphics and text in any way desired.
- Automatically places live charts and graphics from the Energy Audit or Rhvac programs wherever you like in the proposal.
- Will soon link with the Chvac program.
- Advanced word processor features like Microsoft Word.
- Creates PDF files of proposals and e-mails them for you!
- Imports and exports Word DOC files.
- No copy protection hassles!

Overview

Proposal Maker is a fast and simple program for creating professional sales proposals and other sales related documents. Proposal Maker contains numerous word processing features such as found in Microsoft Word. But more than just a word processor, the main advantage of Proposal Maker is that is creates proposals automatically from equipment selection and cost comparison results obtained from Elite's Energy Audit and Rhvac programs and soon from Elite's Chvac program. As equipment is selected and compared, key results such as savings and payback

amounts are automatically pasted in both text and graphic form into the proposal. Additionally, pictures of the equipment being proposed can be shown as well. There is also provision for inserting your own pictures into a proposal such as a picture of the old unit that will be replaced or a picture of who will install the unit.

Proposal Maker is very flexible in that multiple proposal formats can be maintained. Use a long form format with lots of detail for that college professor customer or a short form for a single working parent with little time for details. Proposal Maker comes with numerous ready to use proposal formats, but you can create any number of new custom formats. Besides proposal letters, Proposal Maker can also print numerous support documents such as copies of customer referral letters, rebate forms, and credit applications, even factory literature can be printed for the proposed products! In this way, a very persuasive packet of information can be delivered to the customer. The proposal documents can be printed and delivered in full color or they can be created as PDF files and e-mailed directly to the customer right from Proposal Maker. Dramatically increase your sales with Proposal Maker!

Document Editing

If you know how to edit a document with a word processing program such as Microsoft Word, you already know most of what you need to know to use Proposal Maker. Changing font and paragraph settings is done with dialogs that are similar to what you are already used to with your own word processor program.

Inserting Live Fields

Adding fields from the host program is a snap. Just find the field you want in the Field Catalog, such as the cooling capacity of the unit you selected for system 1, then drag and drop the field onto the document where you want it to go. The field will automatically update itself to show the data from the current project.

Buyer's Guide

Here are a few things to look for when shopping for a program like Proposal Maker:

- **Familiar Word Processor Features** - The processor itself should be very similar to the word processor program that you already learned how to use, such as Microsoft Word. You don't want to have to learn a whole new way of doing things. Shortcut keys, dialogs, menus, and buttons for changing fonts, paragraphs, tables, etc. should be similar to the ones you are already familiar with.

- **Fields for Main Calculation Results** - The program should provide insertable fields that automatically link to all the main calculation results of the host program. For example, you should be able to easily insert fields for the sensible and latent gains, the sensible loss, the CFM requirements, the operating costs, amount of infiltration, etc...

- **Fields for Each Input** - As far as is practical, the program should provide insertable fields that link to each of the host program's inputs, such as the client name and address, the outdoor design conditions, and the air conditioner and furnace model numbers that were selected for each system.

- **Drag and Drop Fields** - The program should let you insert fields on the document with drag and drop, in addition to inserting at the cursor location. Drag and drop is much faster when you want to insert several fields. You don't want to have to keep clicking back on the document to position the cursor each time you insert a new field.

- **Multiple Documents** - You should have the ability to create multiple documents in a single project. You should be able to have things like a proposal, an envelope addressed to the client, a thank you letter, a follow up letter, all within the same project for a particular customer.

- **Easy Template Selection** - When you start a new document, the program should prompt you with a list of available templates to choose from, and should show you a WYSIWYG preview of each template so you will know how it really looks on the page before you start your new document.

- **Dynamic Picture Fields** - The proposal program should provide dynamic picture fields, not just the ability to insert static pictures. Picture fields are intelligent pictures that automatically change based on the selections you made for the project. For example, the program should give you a picture field that will show the outdoor condensing unit for the air conditioner you selected for the current project, and if you later select a different unit the picture on the document should change automatically.

- **Live Graphs** - The program should let you insert live graphs onto the document that show the calculation results of the host program. A live graph is not just a static picture, but is an intelligent chart that automatically updates itself on the document to reflect the new results whenever you change anything in the project.

- **Customizable Toolbars and Menus** - If you have done much work in a word processor program you know that one of the most important things is to be able to customize the

toolbar and menus so you can make the tools you use most often easier to get to, and so you can set the shortcut keys however you want. The program should adjust to suit your preferences, not the other way around.

- **Accessible Menus** - The menus for the document window should be easily accessible without having to go through several sub-menus to get to the item you want.

- **Extensive Field Properties** - The program should give you the ability to change the properties of fields that are already on the document, and should give you a full array of choices for each field. For example, a field on the document that show fuel cost for a system should let you change which system is referenced, which type of fuel (electricity, natural gas, etc...), and how the number is formatted.

- **Custom Formulas** - The proposal program should give you the ability to put fields on the document that use your own custom formulas that the program evaluates and shows the results for. For example, you should be able to create your own field that takes the system list price and automatically adds 4% sales tax. Another example would be to define a field that automatically calculates the difference between the projected operating costs of two of your proposed systems.