

# AUTOMATED DESIGN/ESTIMATING BUILDS PROFIT!

Odds are against winning Architectural or Engineering proposals. The resultant waste costs industry \$Billions.

To counter this a number of industrial vendors have been using this program to optimize and accelerate their offerings. A Canadian user reported that "the fabricated steel weight obtained by the program was only slightly different from that obtained by Structural Engineers but the quick response led to more orders."

PARAMETERS

SHAPE LENGTH FT. 40

TOTAL UNIFORM LOAD KIPS ("X")

UN-BRACE LENGTH "Y" AXIS FT. 40

AXIAL LOAD KIPS

BENDING KIP FT 4500

BENDING KIP FT

COMPUTE AS COLUMN - 2

COMPUTE IN TENSION - 4

COMPUTE AS BEAM - 13

COMP. AS FLOOR BEAM - 19

COMPUTE COMBINED 3

**W36X798**

I<sub>x</sub> = 62600

MIN WT LBS/FT

I<sub>ACT</sub> = 0.8389262

DEFLECT. RATIO

DEFLECT INCHES 0

BEAM LBS/FT 795.6

CHECK - 9

TOTAL UNIFORM LOAD W/BEAM 31.82

STEEL YIELD STRENGTH - KIPS/IN<sup>2</sup>

FY = 36 - 11 FY = 50 - 16 36

SINGLE MEMBER INSTRUCTIONS

- 1) CLICK STEEL YIELD STRENGTH FY =
- 2) CLICK YELLOW SHAPE DESIRED
- 3) EDIT BLUE PARAMETERS
- 4) CLICK COMPUTE BASIS
- 5) READ SHAPE SELECTION
- 6) OPTIMIZE FOR IMPROVED ECONOMICS.

Whether by manual input to menu shown at left, automatic input from another program or an assist to computer aided design or finite element analysis this program automatically selects structural steel shapes of least moment of inertia meeting code requirements. That means least cost.

Automatic input reduces human intervention making for very rapid automation of design, estimating and qualification, "in the time it takes for a coffee break." (page 4)

Program's SINGLE MEMBER SELECTION menu, copied at left, explains. Follow instructions at bottom of menu. Enter data, click COMPUTE, instantly read size of steel shape required. In this case Read W36X798 steel beam. (Compare to page 2-149 of AISC 9<sup>th</sup> Edition.)

But this is not enough, buyers want return on investment. To quantify this program includes automated tools for converting cash flows into Internal (IRR) or Modified Internal Rate of Return (MIRR).

This gives projects numbers that are universally understood.

**INTERNAL RATE OF RETURN "IRR" CALCULATOR "B"**

1 - TOTAL PROJECT LIFE IN YEARS (INCLUDES 2 BELOW)	10
2 - CONSTRUCTION TIME IN MONTHS	6
3 - TOTAL INVESTMENT \$	1000000
4 - ANNUAL RESULTING INCOME OR SAVINGS	150000
5 - SALVAGE VALUE AT END OF LIFE (AT 1)	60000
<input type="button" value="APPLY - 1"/>	
6 - INTERNAL RATE OF RETURN %	8.16
7 - ERROR \$	-5.84

A Kenworth truck dealer used this menu to sell a truck in just a few minutes.

Program includes many more such economic tools.

OTHER PROGRAMS ARE FOR BRIDGES, TRUSSES, BENTS AND SUPPORT STRUCTURES. THE FOLLOWING IS THE VERY SIMPLE DATA ENTRY FOR A RIVER BRIDGE.

**FrmTruss - MARCH 5, 2015 - BELT CONVEYOR TRUSS and BRIDGE WEIGHT ESTIMATING PROGRAM - BETA VERSION**

FILE

DEMO FILE = TTT\_CTRUSS\_DEMO PREFIX "TTT" **5AL\_CTRUSS - Licensed Version** C:\WINBELT\TTT\_ELDERSBURG.TXT

**BELT CONVEYOR TRUSS INPUT DATA**

SZ SEISMIC, (DEFAULT = .2)	0	0
CDL CONCENTRIC UNIFORM VERTICAL UNIT DEAD FORCE	1000	lbs/ft
CLL CONCENTRIC UNIFORM VERTICAL UNIT LIVE FORCE	1000	lbs/ft
CLLC - blank		
PF - LATERAL WIND FORCE PER UNIT LENGTH OF TRUSS	500	lbs/ft
blank		
blank		
L - PANEL LENGTH (CENTROIDAL)	240	in
DA - OVERALL LENGTH	2604	in
DAC - CANTILEVER SECTION OVERHANG (0 IF NONE)	1800	in
EW - VERTICAL FORCE AT END OF CANTILEVER SECTION		lbf
B - WIDTH (CENTROIDAL)	240	in
DE - DEPTH (CENTROIDAL)	240	in
DENOMINATOR (DEFLECTION, USUALLY = 360)	360	360
TensionKlr - MAX KL/R IN TENSION - 300 DEFAULT	300	300
Kspecial column stability factor default = .65	0.65	0.65
FY - STEEL YIELD STRENGTH. KIPS PER SQ INCH	36	36
Zklr - MAXIMUM KL/R FOR MEMBERS (DEFAULT 160)	0	0

**USE ENGLISH ONLY**  
 ENGLISH  METRIC

E 1

**FOR ESTIMATING, FEASIBILITY AND OPTIMIZATION PURPOSES! FINAL DESIGN MUST BE PERFORMED BY A QUALIFIED PROFESSIONAL ENGINEER!**

5AL\_CTRUSS - LICENSED VERSION

With above data entered or retrieved from file, clicking COMPUTE displays the output form seen on the next page.

Click shape designation | click compute | click bridge load placement | read weight | sell project.

Program WINBUILDIT also provides for input and output data for an entire building. Shape of building is defined in x,y and z coordinates like in CAD programs.

The output data (for small hospital shown next page) includes the most meaningful:

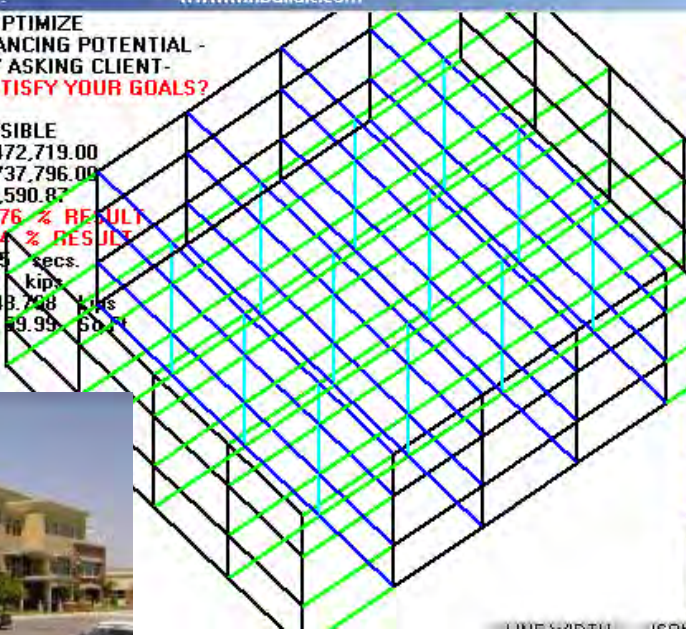
INTERNAL RATE OF RETURN.

See output on next page.

Form46 BUILDING QUALIFICATION FACTS! www.winbuildit.com

DURING A COFFEE BREAK REAL-TIME OPTIMIZE TO MAXIMIZE CLIENT VALUES AND FINANCING POTENTIAL - DETERMINE QUALIFICATION BY SIMPLY ASKING CLIENT - DO THESE FINANCIAL PREDICTIONS SATISFY YOUR GOALS?

BUILDING STRUCTURE	FEASIBLE
STEEL	\$1,472,719.00
BUILDING REPLACEMENT COST	\$7,737,796.00
MONTHLY REVENUE	\$93,590.87
INTERNAL RATE OF RETURN	34.76 % RESULT
MODIFIED IRR	32.1 % RESULT
BUILDING VIBRATION PERIOD	0.53 secs.
STRUCTURAL STEEL WEIGHT	491 kips
GROSS WEIGHT	6848.798 kips
GROSS FLOOR AREA	52159.99 sq.ft



RETURN - OPT1  
 ANIMATED ISOMETRIC-1  
 ISOMETRIC - OPT4  
 PLAN VIEW OPT5  
 FRONT ELEV OPT6  
 SIDE ELEV OPT8  
 3-VIEWS OPT9  
 SCALE 1

DOWNLOAD TRIAL VERSION FROM [www.beltconveyor.com](http://www.beltconveyor.com) [www.winbuildit.com](http://www.winbuildit.com) or [www.suverkrop.com](http://www.suverkrop.com) IF DOWNLOAD FAILS, OR IF YOU PREFER, REQUEST FREE CD FROM BELOW NAMED. COPY WINBELT AND WINBUILDIT DIRECTORIES DIRECTLY TO C:DRIVE, WRITE SHORTCUTS BELOW, REVIEW PDF INSTRUCTIONS. ACTIVATE LICENSE VERSION BY CALLING RON OR DON SUVERKROP.

C:\WINBELT\BELTHELP.PDF <<<<<<< INSTRUCTIONS  
 C:\WINBELT\5A\_CTRUSS.EXE (1)  
 C:\WINBELT\6A\_CBENT.EXE  
 C:\WINBELT\SIMULATOR.EXE (TRUCK CRANE DESIGN)  
 C:\WINBELT\7A\_CTOWER.EXE  
 C:\WINBELT\2B\_WINBELT.EXE (BELT CONVEYOR DESIGN, PRICE)  
 C:\WINBELT\4B\_ESTIMATE.EXE (BELT CONVEYOR ESTIMATE)

C:\WINBUILDIT\BuilHELP.PDF <<<<< INSTRUCTIONS  
 C:\WINBUILDIT\5A\_WINBUILDIT.EXE (1)

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\AA\15\PROGRAMS\_PURPOSE - March 26, 2015