



## LG Electronics

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# ENGINEERING TOOLS & TECHNICAL SOLUTION

## 01

### LATS PROGRAMS

- LATS CAD
- LATS HVAC
- LATS ENERGY
- LATS REVIT

The LATS\* Program series has been developed to offer the best and the most optimized tool for LG HVAC systems, providing our customers a faster, easier, and a more accurate way in everyday duties of Model-selection, Draft Energy Estimation & Designing, and many more.

\* LATS : LG Air-conditioner Technical Solution

## 02

### ENERGY MODELING

- eQUEST®
- EnergyPlus™
- TRNSYS

## 03

### CFD

- FLUENT

## 04

### NOISE ANALYSIS

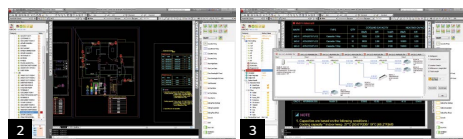
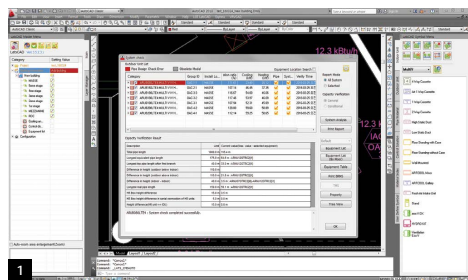
- LMS Raynoise
- Rayacoustics



# LATS CAD

## LATS CAD

LATS CAD is LG's designing program, aligned with AutoCAD. Compared with the conventional AutoCAD, LATS CAD enables faster and a more accurate design of LG HVAC products. Moreover, it offers not only designing, but also quotation, installation review(estimation on refrigerant piping diameter and additional refrigerant, test driving result by piping lengths), and minimizes possible issues of installation by estimation.



1. Drawing check (Installation review)
2. VRF system drawing
3. System diagram

### Data Requirements for Analysis



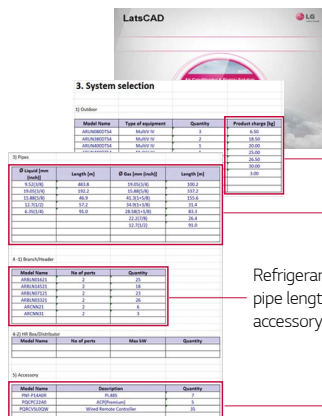
- Drawings
  - Architectural drawings (Plan, Elevation)
- Report of load calculation



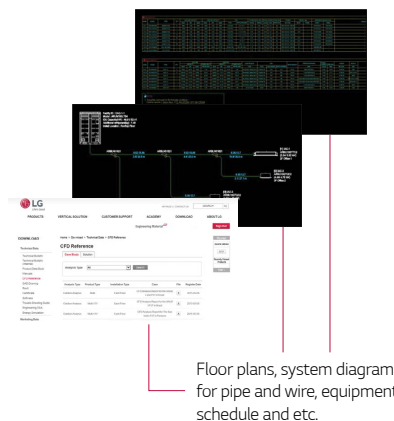
### LG's Support & Offering

- Excel report

- LATS CAD drawings



Refrigerant charge, pipe length, diameter, accessory and etc.

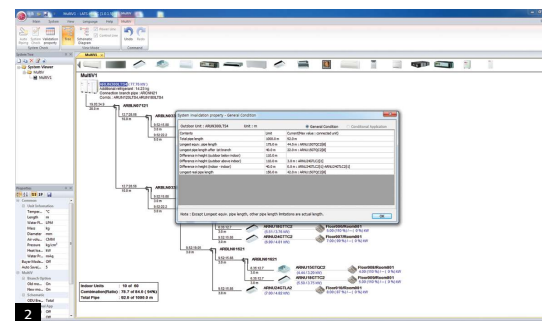
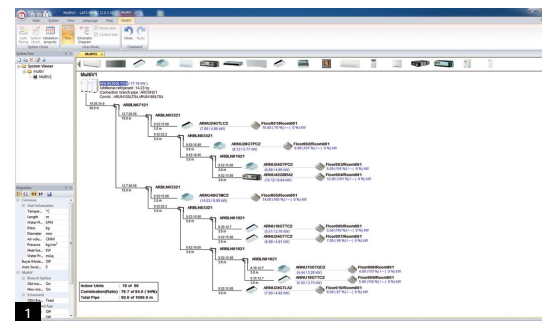


Floor plans, system diagram for pipe and wire, equipment schedule and etc.


# LATS HVAC

## LATS HVAC

LATS HVAC is an integrated model selection program of LG HVAC products\*, enabling an accurate and quick selection on the best model suitable to each sites. Deriving results for test driving by piping lengths is also possible, same as LATS CAD program. In addition to model selection, faster estimation on refrigerant piping diameter and additional refrigerant is possible, along with auto printing of reports.



\* Multi V, Single, Multi, ERV, AHU kit (AHU Kit : to be released in 2nd half of '16)

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Model Selection - Analysis

1 of 1

## Model Selection - Analysis

Project Name: Project\_20150326

03/26/2015

System No. 1/1

### 1 Outdoor

Model Name	Quantity	Unit Price	Total Price
ARUN300LTS4	1	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>

### 2 Indoor Units

Model Name	Quantity	Unit Price	Total Price
ARNU180TTC1	2	0	0
ARNU240TTC2	1	0	0
ARNU190TDC1	1	0	0
ARNU240TDC1	1	0	0
ARNU280TDC1	1	0	0
ARNU480TDC1	1	0	0
ARNU420BRA2	1	0	0
ARNU240TLA2	1	0	0
ARNU240TLC2	1	0	0
<b>Total</b>	<b>10</b>	<b>0</b>	<b>0</b>

### 3 Pipes

Discharge	Length	Unit Price	Total Price
6.35	9	0	0
9.52	43	0	0
12.7	29	0	0
19.05	29	0	0
19.05	26	0	0
22.2	8	0	0
25.4	20	0	0
34.9	20	0	0
<b>Total</b>	<b>184</b>	<b>0</b>	<b>0</b>

### 4 Branch/Header/Common pipes

Model Name	Quantity	Unit Price	Total Price
ARBUN1621	4	0	0
ARBUN3321	1	0	0
ARBUN121	1	0	0
<b>Total</b>	<b>6</b>	<b>0</b>	<b>0</b>

### 5 Accessories

Model Name	Quantity	Unit Price	Total Price
PT-MLC (DU)	2	0	0
PT-UMCI (DU)	3	0	0
PT-UCI (DU)	1	0	0
<b>Total</b>	<b>6</b>	<b>0</b>	<b>0</b>

3

1. Automated pipe selection, additional refrigerant calculation
2. System check
3. Auto printing of estimation and result reports

### Data Requirements for Analysis



- Report of load calculation



### LG's Support & Offering

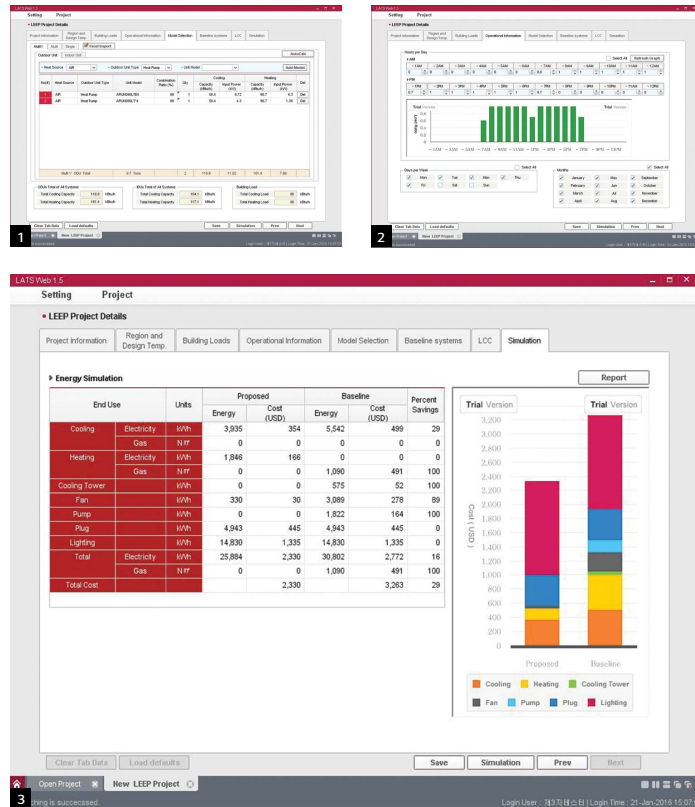
- Equipment selection report
- Pipe quantity report
- Accessory quantity report
- Additional refrigerant amount report
- Equipment diagram



# LATS ENERGY

## LATS ENERGY

LATS Energy program is a draft energy estimation program, self-developed by LG Air-Solution Business Unit. This program helps estimate the draft energy usage and analyzes the life cycle cost of LG VRF models during the early stage of a project. By simply selecting information such as the project's region, equipment usage schedule, and applied products, the results can be easily seen.



1. 2. LATS Energy Input (products, schedule)
3. Result (draft energy consumption)

### Data Requirements for Analysis



HVAC Equipment schedule  
(Load Calculation Report)



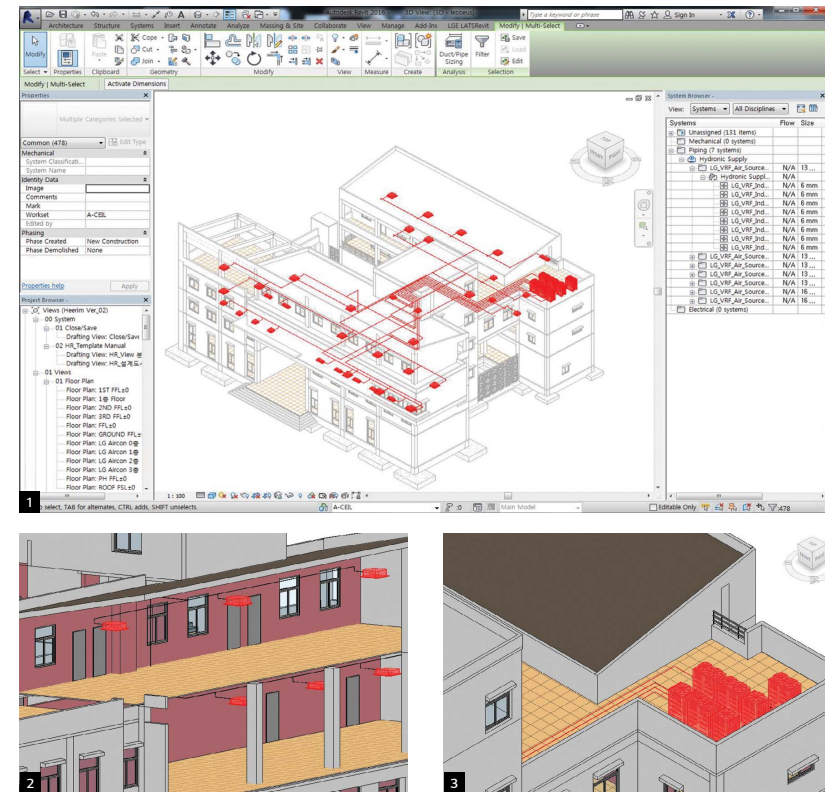
### LG's Support & Offering

- Energy Consumption
- LCC (life-cycle cost)

# LATS REVIT

## LATS REVIT

LATS REVIT is LG's 3D HVAC designing program, aligned with REVIT™. LATS REVIT is developed to make 3D designing of LG HVAC products easier than the conventional program. It enables engineers to check 3D images from designing stage and prevents possible issues of the installation stage.



1. LATS REVIT running screen
2. Indoor unit 3D floor plan
3. Outdoor unit 3D floor plan

### Data Requirements for Analysis



- Drawings
- Architectural drawings(3D)  
(Plan, Elevation)
- Report of load calculation



### LG's Support & Offering

- Drawings (3D)
- LG VRF
- HVAC Equipment Schedule
- HVAC Quantity report