

# Home Automation Request For Proposal (RFP)

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## **New House Address**

283 Reynolds Road  
Landenberg, PA 19350-1320

## 1. Summary and Background

The purpose of this RFP (Request for Proposal) is to solicit proposal feedback from various local companies that have expertise in the home automation area, and to conduct a fair and extensive evaluation based on criteria listed within the document. This will ultimately result in selecting a company that will become a full partner in this project, along with our architect, builder, and key tradespeople. Details on the scope of automation will be included in subsequent sections of this document. Any suggestions for areas that may have been missed, that would represent opportunities for automation, would be appreciated. Please include them in your response to this RFP.

If you wish to discuss any aspect of this proposal in person or via a phone call, please see the contact information on the cover page of this document.

Also included in this RFP are digital files of the property survey, house conceptual plans, and a high level aerial map of the property.

In July of 2012, Stan and Estelle purchased a scenic 7 acre property (including a 2 acre pond) in Landenberg, PA. The property is adjacent to the Somerset Lake community (<http://www.somersetlake.net/>), and also borders St. Anthony in the Hills (<http://www.stanthonyinthehills.com/>) property of over 140 acres on the north and east property lines. The new house gravel driveway (approx. 1000 feet) is at the intersection of Reynolds and Buttonwood Roads. The property is also just 1 mile from our current house in Somerset Lake.

We will be building a small one level custom house using architect Townsend Moore (Kirkwood, PA) and Hugh Lofting Construction Management (<http://www.hughloftingt看umberframe.com/>). The house will be state of the art in terms of design and energy efficiency, using LEED (<http://new.usgbc.org/leed>) and Passive House (<http://www.passivehouse.us/passiveHouse/PHIUSHome.html>) inspired construction techniques. The desire is also to make this a truly smart house, using state of the art home automation strategies, to allow for control of major house functions and energy monitoring once house is built. The house will be designed and built utilizing Universal Design principles (<http://www.universaldesign.com/>) and will allow for Aging in Place (<http://www.ageinplace.org/>) as Stan and Estelle grow older. Estimated square footage for this house is 3,000 to 3,200 square feet of conditioned space.

We are still in the early planning stages of the house design, and want to begin the RFP process early, as the company selected will be a full partner with input into the detail design and construction documents development. This house will be a truly unique project, and will be able to highlight your expertise, products and services in the best possible way, including using this house for future references and demonstrations. This house may very likely be written up in various home building and home automation books and magazines.

### **About Stan and Estelle:**

Estelle is a true artist at heart, and has worked many years in the arts and custom picture framing business, as well as having her own interior design and staging business. For the last 6 years, she has launched and grown her custom jewelry business, Estelle Lukoff Designs. Estelle will have a home studio as part of the house, and will be able to receive customers there for studio sales. Estelle also does about 5-6 craft shows each year in the Delaware/Pennsylvania area. Her web site is [www.estellelukoffdesigns.com](http://www.estellelukoffdesigns.com)

Stan is a technology enthusiast, and recently retired from DuPont after 37 years as a computer professional, most recently as a Senior Consultant working on Business Intelligence/ Analytics reporting projects and SAP enterprise software implementations, with expertise in data migration. He also was one of the original classes of Six Sigma Black Belts that were trained and certified at DuPont in 2000. He has managed multi-million dollar projects, and is comfortable with managing details while still being able to see the big picture. One of Stan's hobbies is high end audio and video, as well as home automation. Stan's goal is to use this house as a living laboratory for showcasing how technology can assist in simplifying and assisting seniors with the aging in place process in their current homes. When Stan entered the computer programming field in 1974, he understood how computers would transform the business world and society in general, and now hopes to apply the same vision in making the transition to a smart house, and showcase all of the benefits of home automation as people age in place.

Links to the current blog for our house project (also known as Kamp Kaolin) is here -> <http://kampkaolin.wordpress.com/> See the pictures tab for various pictures of the property during different times of the year. The pond used to be a former kaolin clay quarry, hence the name reference of Kamp Kaolin. The cabin and garage shed that is currently on site will be torn down and the wood and other materials will be salvaged for recycling.

## 2. Proposal Guidelines

This RFP represents the requirements for an open and competitive process. Proposals will be delivered electronically on **March 20<sup>th</sup>, 2013**. Responses to this RFP will be accepted until **5pm EST, April 19<sup>th</sup>, 2013**. Any proposals received after this date will not be considered. Stan will be available by phone, email, or in person meeting to discuss any questions you may have related to this RFP.

If the organization submitting a proposal must outsource or contract any work to meet the requirements contained herein, this must be clearly stated in the proposal. Additionally, all costs included in proposals must be all-inclusive and include any outsourced or contracted work. Any proposals which call for outsourcing or contracting work must include a name and description of the organizations being contracted.

All costs must be itemized to include an explanation of all fees and costs. This should include manufacturer model numbers and component description information if known at this time. Also, please be specific on your structured wiring solutions, as well as lighting strategy. If you have any other partners (ie lighting) that you work with, please include that information as well.

Contract terms and conditions will be negotiated upon selection of the winning bidder for this RFP. All contractual terms and conditions will be subject to review and will include scope, budget, home automation components, schedule, and other necessary items pertaining to the project.

### **3. Project Purpose and Description**

This RFP represents the requirements for an open and competitive process. Proposals will be accepted until **5pm EST, April 19, 2013**. Any proposals received after this date will not be considered.

#### **The purpose of this project is as follows:**

Provide home automation, consultation, structured wiring, equipment, training, documentation, project management and support for the new Lukoff residence at 283 Reynolds Road.

#### **Project Description:**

We are seeking a local home automation company to utilize the latest proven technologies to manage the following areas of the home:

- Energy management and monitoring (remote access via web) – integration with PECO smart meter and other devices to allow for real time feedback on utility usage, as well as historical data analysis.
- Security management with video monitoring (remote access via web) and central station monitoring capability for intrusion, fire(heat and smoke) and water sensors.
- HVAC management (remote access via web).
- Distributed audio/video capabilities for streaming music, TV audio and video, streaming Netflix, etc.
- Media room Home Theater integrated control (TV monitor, AVR or dedicated SSP and amp, Blu-Ray DVD, PVR/tuner, lighting, etc.)
- Lighting control and management; dimming capabilities; LED low voltage and line voltage will be used throughout house (remote access via web)
- Structured wiring for audio and video distribution; internet access, separate AV cabinet for equipment; central location in mechanical room for home run wiring; robot charging area (future).
- Systems integration and control – connecting with current and future electronic systems and protocols.

- Digital home health/tele-medicine ready.
- Home networking management – wired and wireless to provide for robust internet services for computers, tablets, phone, etc. in a way that maximizes bandwidth and allows for wireless network virtualization. Internet service coming into the house most likely will be Verizon Fios (50/25 Mbps). There will be a high speed fiber optic connection directly to the house from the street.

The completed system should be able to allow Stan to make simple changes, while realizing that significant changes may require custom programming from the home automation company selected. The user interface on controls screens must be intuitive, and allow for easy use by Estelle and Stan, and guests in the house.

Structured wiring will be installed prior to drywall to maximize efficiency and reduce costs for this work. Please specify structured wiring details (ie Coax, Category wire type, protocols (ie HDBaseT, HDMI, etc.) in your proposal.

With the exception of the outdoor speakers (ie screened in porch and breezeway), Stan will be providing the in-wall planar magnetic architectural speakers used throughout the house, including the media room. Stan will also be providing the dedicated audiophile equipment and interconnect wiring for the media room (ie the Blu-Ray DVD player, AVR or separate SSP and amps) for the media room. Other equipment will be specified and provided by the selected vendor with input from Stan. Please contact Stan with any questions in this area.

## 4. Project Scope

### Distributed Audio and Video Capabilities

- Allow for distribution of audio and video in the following rooms per the home automation matrix (see attachment at end of this document).
- Describe proposal and sources for streaming music (ie Sonos, Pandora, iTunes, Internet radio, etc).
- Describe options for television content, ie FIOS, satellite, Local HD antenna, Aereo, Hulu Plus, Netflix, etc.

### HVAC Management

- House will have 2-3 zones using hydronic radiant heating tubes in a concrete frost insulated slab. One zone will be for the future pool/spa room, and the second zone will be for the rest of the house (may also be a north/south zone). The geothermal source will be from pipes in the 2 acre pond (pond depth is 15-20 feet). This will also serve to preheat the domestic hot water.
- Cooling and dehumidification will be using forced air, cooled from the geothermal heat exchanger.
- There will also be an energy recovery ventilator (ERV) since the house will be so tight regarding air infiltration. There will also be some type of air filtration system to minimize dust and pollen.

### Lighting

- Sensors in key rooms to automatically turn on and off lights.
- Light sensors automatically shut off lights when adequate daylight is available (override capability for task lighting, etc)
- All exterior lighting is dimmed to 20-30 percent after midnight and automatically turned off at dawn.
- All lighting will be LED or CFL, and will be dimmable.
- All lights will go on when security system senses an intrusion or abnormal condition.
- Describe capabilities to minimize conventional wall switches and dimmers and centralizing management and control using automation and lighting controls.
- Specify your expertise to provide for LED lighting that has central AC to DC conversion utilizing POE (power over Ethernet) capabilities. See companies below:
  - <http://lumencache.com/>
  - <http://www.nuleds.com/>

## Window Treatments and Shades

- Since the house setting is so private, there will be few if any window treatments that initially will be automated.
- Solution should allow for this to be done after homeowner moves in and determines what window treatments may be needed. Wired or wireless?

## Security

- Outdoor wiring for remote cameras and intercom (gate, front door, mailbox sensor, etc); may need a fiber run to gate due to distance (approximately 1000 feet). Driveway sensors should be considered before and after gate to alert for car and pedestrian movement.
- Storage and playback capability for security cameras via web and smartphone.
- Plan for fire, smoke, and heat, and water detectors that are centrally monitored.
- May also be considering water sprinklers for safety and insurance purposes.
- Prefer security monitoring and control to be handled by local company. Currently using Advanced Security in Delaware.

## Energy Management/Power Conditioning/Redundancy and Backup

- Allow for current view of energy consumption at as low a level of detail as possible.
- Allow for summary information daily, weekly, monthly, and year over year.
- Assume latest smart meter from PECO will be installed.
- The house will have a whole house surge protector on the main circuit breaker box. Please specify any power conditioning equipment recommended for AV rack and media room.
- The alternative energy sources for the house may also include micro-hydro turbine (from pond outflow), Solar PV panels, and Solar Hot Water panels. The goal is to be as close to net zero as possible.
- Specify any dedicated line voltage sources needed, ie for A/V cabinet or other areas of house. The media room will have at least 2 dedicated AC circuits for the home theater equipment.
- The house may also include a small backup generator (natural gas powered) when needed.
- Do you have any capabilities to install the following power generation and backup equipment or something similar? <http://www.residentialsystems.com/news/0022/solar-power-brand-newpower-launched-by-av-veteran/84224>



## **Systems Integration, Management and Control**

- Specify recommendations for apps or dedicated control interfaces as well as compatibility with smartphones and tablet devices. Also identify wand style remotes that may be recommended (ie media room).
- Ability for remote diagnostics and reboot capabilities.
- Ability for hardware and software upgrades over time. Specify plans to keep software current in home automation devices.

## **House Computer Network**

- Wired and wireless internet capability. See matrix at end of document for additional details.
- Specify how much room will be needed in the centrally located mechanical room for home-run wiring, equipment shelves, etc.
- Ensure A/V devices and home network security (wired and wireless) are configured to eliminate any unauthorized intrusions.

## **Misc**

- Cellular signal booster ?
- Central vacuum?
- Telephone service recommendations (ie VOIP, cellular to wireless handsets, dedicated landline, etc). Need fax transmission capability. Incoming faxes can go to email as they do today.
- Capabilities around aging in place technologies (ie monitoring, communications, special needs)?
- Keyless entry?; temp security codes for workmen?
- Sensor to detect when mail has been delivered?
- Interface to weather stations – severe weather alerts.
- Thermostat sensors in different rooms; control by HVAC and home automation system
- Power outage and emergency notification via email or texts
- Activation of flashing emergency light on mailbox by street for police, EMS or fire dept.
- Low temperature sensors in house.
- Minimize or eliminate unnecessary “wall warts”. Centralize as much of this as possible in mechanical room.

The following criteria must be met to achieve a successful project:

- Visually and aesthetically pleasing design of wall hardware and devices. Remember Estelle is an artist and interior decorator.
- User-friendly interface that is easy to navigate. Discuss use of a single interface GUI design consistent throughout the house vs apps to facilitate easy operation by occupants and guests.
- Ability to migrate to new devices as needed. Future proof the structured wiring infrastructure, design and equipment as much as possible, given current state of the art.
- Plan and perform testing processes at various stages of implementation in order to ensure functionality prior to handing the system over to the homeowners. Specify plans for testing and turnover to homeowners.

## 5. Request For Proposal and Project Timeline

### Request for Proposal Timeline:

All proposals in response to this RFP are due no later than **5pm EST, April 19<sup>th</sup>, 2013**.

Evaluation of proposals will be conducted from **April 20<sup>th</sup>, 2013 through May 5<sup>th</sup>, 2013**. If additional information or discussions are needed with any bidders during this two week window, the bidder(s) will be notified.

The selection decision for the winning bidder will be made no later than **May 6<sup>th</sup>, 2013**.

Upon notification, the scope of work negotiation with the winning bidder will begin immediately. This should be begin the week of **May 6<sup>th</sup>, 2013**.

Notifications to bidders who were not selected will be completed by **May 17<sup>th</sup>, 2013**.

### **Project Timeline 2013:**

Selection of home automation company – by May 6

Scope of work review – May 6 – May 10

Detail design and development – TBD

Construction project initiation – TBD

Installation of structured wiring – TBD

Installation completion – TBD

Testing and integration – TBD

Final signoff by homeowner – TBD

## **6. Budget and Costs**

Include all costs to complete the tasks described in the project scope. Include in your project proposal breakdowns by equipment (list as much detail as possible and costs), wiring, and labor (including hourly rate by skill level). Does your business model include the option for cost plus pricing? If so please describe in your response.

Understand that this is needed at this point to compare potential solutions and associated costs and will be one of the key factors for decision making (see Section 8)

Items that will be supplied by homeowner (and excluded from your bid proposal):

- All inside architectural speakers used throughout house.
- Media room audio equipment and interconnect wiring for this room only.
- TV monitors most likely will be supplied by homeowner – to be discussed.

Please describe any recurring costs (ie maintenance or monitoring costs) as well in your response.

**NOTE: All costs and fees must be clearly described in each proposal.**

## 7. Bidder Qualifications

Bidders should provide the following items as part of their proposal for consideration:

- Description of experience in planning, building, and implementation of home automation projects. If you wish to have Stan and Estelle visit a recent project of similar scope, please set up an appt. prior to April 26<sup>th</sup>.
- Describe what differentiates you from your competition.
- List of how many full time, part time, and contractor staff in your organization.
- Describe business insurance for liability.
- List references from past customers for similar scope of work projects. Can these customers be contacted? If so provide contact information.
- Anticipated resources you will assign to this project (total number, role, title, experience). Please include qualifications of these resources including any certifications (ie CEDIA).
- Timeframe for completion of the project (estimated hours by high level tasks).
- Communications process and key contacts that will be used once selection is made.

## 8. Evaluation Criteria

The Request for Proposal evaluation will be based on the following criteria. To ensure consideration for this RFP, your response should be complete and will be evaluated on the following criteria:

- Overall proposal suitability: proposed solution must meet the scope and needs included herein and be presented in a clear and well organized manner.
- Organizational experience: Bidders will be evaluated on their experience as it pertains to the scope of this project.
- Previous work: Bidders will be evaluated on examples of their work pertaining to home automation design/implementation as well as client feedback in your references.
- Value and cost: Bidders will be evaluated on the cost of their solutions based on the work to be performed in accordance with the scope of this project.
- Technical expertise and experience: Bidders must provide descriptions and documentation of staff technical expertise and experience.

Each bidder must submit an electronic or paper copy of their proposal to Stan Lukoff (slukoff@gmail.com) by **5pm EST, April 19<sup>th</sup>, 2013.**

## Home automation matrix

version 3/2/2013

	Capabilities								
	Wifi	Wired Ethernet	Distrib Audio	Distrib Video	Security Camera	Intercom	Lighting control	Home Theater	
<b>Rooms</b>									
Pool/spa area	X		X	X	X		X		
M Bath	X		X				X		
M Closet	X								
M Bedroom	X		X	X			X		
Dining Room	X		X				X		
Media/Family Room	X	X	X	X	X		X	X	
Kitchen	X	X	X				X		
Mudroom	X								
Pantry	X			X					
Studio/ GB1	X		X	X			X		
Office/ GB2	X		X	X			X		
Guest Bath	X			X			X		
Screened Porch/Breezeway	X						X		
Front Gate					X	X	X		
Front Door					X	X	X		
West entrance to Studio					X	?	X		
Outdoor areas (selected)	X		X		X		X		
Garage									
Equipment Shed									