



Strengthening Construction Management in the Rural Rehab Line of Business

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NeighborWorks Rural Initiative

Working Together for Strong Communities



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SECTION 1

Overview and Abstract

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This initial condensed section includes; introduction and methodology, themes and observations, definitions of the five essential subsystems and the three rehab production models.

The Five Key Observations

Observation #1: Rural rehab success emanated from positive thinking and persistent implementation

Observation #2: Almost every RHRO would benefit from a substantial increase in the per unit funding available, especially in light of the forthcoming HUD HOME requirement to establish written rehab standards in ten subcategories.

Observation #3: A smartphone and tablet with 20 to 40 apps is the rehab specialist's Swiss Army knife. They are our, GPS, calculator, spec writer, office lifeline in case of danger, camera, clock, cost estimator calendar and a hundred other single-purpose but very important uses.

Observation #4: NeighborWorks® Rural Initiative could provide a clearinghouse for success techniques targeted to rural rehab. Each month it might focus on a specific aspect of rehab management; inspection checklists in January, green specs in February, feasibility checklist in March, contractor qualification questionnaires in April and so on.

Observation #5: Even with most components of in-house contractor success formula in place, per the Statistic Research Institute 53% of construction firms go out of business within the first 4 years. It remains a very risky model that requires significant; funding, staff experience, administrative support and risk tolerance.

Three Rehab Production Models And Their Alternatives

This middle section restates the introduction and methodology and offers a detailed review of the Traditional Rehab Specialist, Construction Management Of Subcontractor and the In-House General Contractor production models .for each model the article provides: definition and staffing pattern, design roles and tasks for each major player, benefits and challenges, alternative models and finally recommendations for successful implementation

Focus Topics

During our interview process, three ideas surfaced that were best served with a mini discussion of the topic rather than being embedded in the already large middle section.

The three topics are; software and technology, management of community relations – marketing and quality control, and budget solutions

1.1

Introduction and Methodology

The team of Robert Santucci and Paul Webb were awarded a contract in response to a NeighborWorks® Rural Initiative RFP to develop a written discussion outlining best practices in rural rehab construction management.

The authors' combined experience of over 80 years in the design and implementation of rehab programs provided rapid understanding of the procedures, tools and protocols. Their collaboration generated a framework for the product that includes five essential subsystems and three rehab production models and their typical staffing patterns. To produce a useful document Robert and Paul focused on the requirement to categorize, analyze and correlate diverse rehab management practices gathered from Rural Housing Rehab Organizations (RHROs) across the United States.

NeighborWorks® Rural Initiative staff identified and provided contact information for rural practitioners, called RHROs in this article, to whom questionnaires were forwarded. Responses were analyzed to identify the model of rehab management and unique procedures of the respondent, the protocols they use and their recommendations. Some who answered the questionnaire were contacted with a second set of researcher questions targeted to clarify and expand their original responses. A number of individuals were also interviewed by telephone to fully define specific aspects of their program design and implementation.

The groups (RHROs) were as diverse as the rural United States of America. They ranged from a self-help rehab program repairing a single major system per job to a for-profit contracting firm affiliated with a nonprofit which will complete over fifty million dollars' worth of construction this year.

RHRO respondents included practitioners from New York, Vermont, Minnesota, Oregon, California, Texas, South Dakota, Virginia, and the Navajo Nation.

All of the RHROs were skilled within their environment and proficient at their respective model.

The observations and recommendations from this research are presented in three Tiers. An overview, three rehab production models and their alternatives, and three-focused mini articles

The statements quoted and shaded in this article were taken directly from RHRO questionnaire responses, email follow-up responses, telephone interviews and RHRO author-approved statements. All other written material was provided by the author's research of program policy manuals, contracts, published program descriptions, website data and past personal interactions with program personnel

1.2

Summary of Survey Observations- Five Themes

THEME #1: WHERE THERE IS A WILL THERE IS A WAY

Resourcefulness, ability to proceed with minimal assets in adverse environments and a tsunami of need inspired successful RHROs in this study to create lemonade from the available lemons; they used what they had to address local rehab needs. Self-help sweat equity, extended family, infrequent volunteers and donated and used materials were utilized with skilled rehab management to create significantly improved homes.

Observation#1: Rural rehab success emanated from positive thinking and persistent implementation.

When administrative sources were insufficient for full-time rehab staff one RHRO contracted for rehab management services.

When private contractors couldn't provide reasonable bids to their rural multifamily tax credit properties or new subdivisions they started their own construction firms.

THEME #2: REHAB FINANCIAL RESOURCES ARE NOT SUFFICIENT

In 1978 HUD somewhat arbitrarily defined substantial rehabilitation as a \$25,000 job. In 2015, 37 years later, the inflation-adjusted figure would be \$89,500. None of the RHROs had an average rehab project cost anywhere near the higher figure. Repairing homes has not become significantly less expensive, the cost has risen approximately 2.9% per year.

Some RHROs responded by combining available single purpose funding (lead hazard control funds, energy and/or green funds, etc.) with CDBG or HOME funds in an attempt to secure enough money to address the actual cost of needed renovation for 60-year-old structures.

Observation #2: Almost every RHRO would benefit from a substantial increase in the per unit funding available, especially in light of the forthcoming HUD HOME requirement to establish written rehab standards in ten subcategories.

THEME #3: SOFTWARE IS A PRIMARY TOOL

All of the rehab management systems in the study relied on digital hardware and software for administration, accounting, project design, rehab management, and many other activities. Simple RHRO operations use less complicated software, larger higher risk operations require more sophisticated options, but everybody is in the current century's digital mode.

In 2016 we are in the midst of major paradigm changes in software distribution. Until recently organizations purchased licenses for multiple copies of applications and loaded them onto individual machines. Increasingly software is located on Cloud servers owned by service vendors who, for a fee, continuously update and maintain the product for hundreds to millions of users.

Tablet devices with in-the-field input, sometimes in conjunction with voice recognition software, have greatly enhanced the ability of construction personnel to design, document and control rehabilitation management tasks.

RHROs in the study who use construction management and in-house contracting models all cite sophisticated scheduling, job cost and Davis-Bacon management applications as essential for success.

Observation #3: A smartphone and tablet with 20 to 40 apps are the rehab specialist's Swiss Army knife. They are our GPS, calculator, spec writer, office lifeline in case of danger, camera, clock, cost estimator, calendar and a hundred other single-purpose but all very important.

THEME #4: CROSS-FERTILIZATION AMONG RHROS OF TOOLS, PROCEDURES AND DOCUMENTS IS NECESSARY

NeighborWorks® Rural Initiative is a great start of a new opportunity to share recommended tools, procedures and protocols. Most of the RHROs have been operating in independent but unfortunately isolated roles.

The most efficient way to develop an effective procedure is to start with somebody else's tested system and edit it for your requirements. That is true for contracts, inspection checklists, punch lists, and the other one hundred and five recommended documents used in rehab construction management.

Observation #4: NeighborWorks® Rural Initiative could provide a clearinghouse for success techniques targeted to rural rehab. Each month it might focus on a specific aspect of rehab management; inspection checklists in January, green specs in February, feasibility checklist in March, contractor qualification questionnaires in April and so on.

THEME #5: WHILE CONSTRUCTION MANAGEMENT IS FOR EVERYONE, IN HOUSE CONSTRUCTION REQUIRES A TREK ACROSS A DEMANDING DESERT

Emulating the outstanding success of RHRO contracting firms who thrive today with \$5 to \$15 million in annual volumes is an exciting but difficult path to follow. Half of the rehab organizations that prepare a business plan to set up construction in-house do not succeed. There is a misleading skewing of observable results, because only the surviving firms tell their happy tales.

The path to first surviving and eventually thriving is similar for all construction firms. It involves well-trained and experienced managers matched with exceptional back-office personnel, extensive digital/computer support, a consistent pipeline of work, a major line of credit and a bit of old-fashioned luck.

Observation #5: Even with most components of this success formula in place, per the Statistic Research Institute 53% of construction firms go out of business within the first 4 years. The only industry that has a higher failure rate is Information tech. It is a very risky model that requires significant; funding, staff experience, administrative support and risk tolerance.

1.3

Essential Construction Management Subsystems

There are three primary models of rehabilitation production management. Each model demands a different set of tools, techniques, and documents for effective implementation. However, five essential subsystems are found in all production models.

1. Design–Rehabilitation Standards

What does the client require to live independently in a basic housing product? What do the codes and laws require? What green requirements will the lenders finance and require? How do we intend to protect our clients from dangerous conditions and disasters? Which of the many ways to fulfill these requirements is the most cost effective for your jobs?

2. Financial Controls

All production management models implement significant procedures to budget and track money. Techniques range from pro-forma spreadsheets and feasibility estimates through construction draws, sales and operating reports. In house construction firms must also implement sophisticated estimating, job cost and tax accounting systems.

3. Staffing models -Time and Team Management

To bring each renovation project in; as designed, on time and under budget, it is essential to build, motivate and manage teams to operate as a integrated whole. The three production models vary staffing models from contracted rehab services to full on site construction crews. Each model requires targeted software to coordinate the teams to generate high quality renovation products.

4. Firewalls and Liability-Risk Management

Every worthwhile undertaking involves inherent risk. fortunately there are low cost, simple and effective ways to reduce risk in each construction management model. Managing community relationships including market analysis and consistent quality control are basic risk management techniques.

5. Documentation

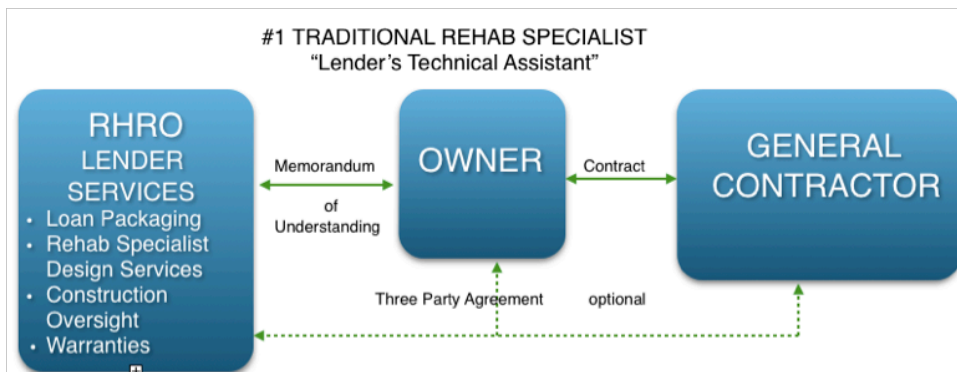
Publicly funded construction is a document-intensive business generating gigabytes of data for proformas, specifications, contracts, environmental reports, payment requests, punch lists and many other files. Documentation makes the world go 'round, and if you choose the right, form sets, computer applications and protocols you can avoid being smothered in it.

1.4

Three Rehab Production Models Defined

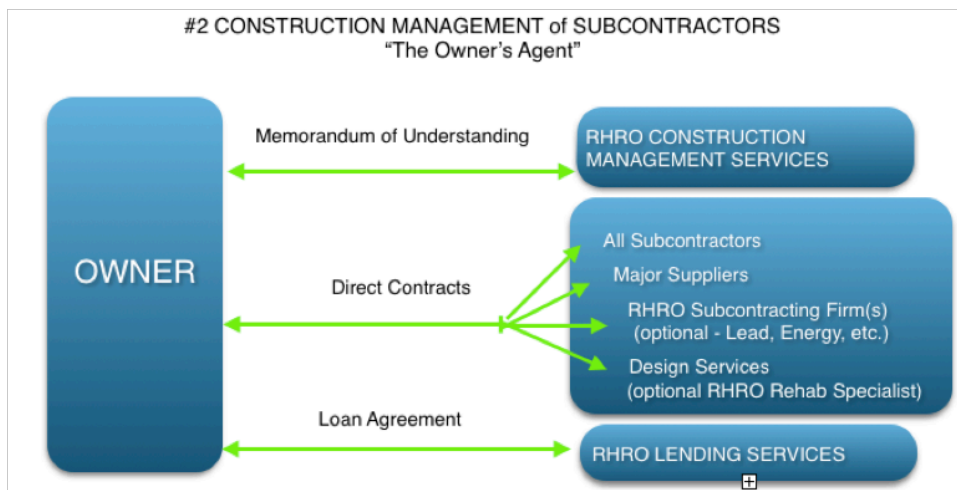
1. Traditional Rehab Specialist Model – Lender’s Technical Assistant

In the lender technical assistant role, the RHRO hires skilled rehab personnel that it “lends” to the client, usually homeowners or purchasers, to help them through renovations, constructing a replacement house or upgrading an inefficient energy system. Often there is no formal contract between the organization and the client. The group perceives itself as providing a construction service in conjunction with low interest loans, grants, infrastructure or expertise.



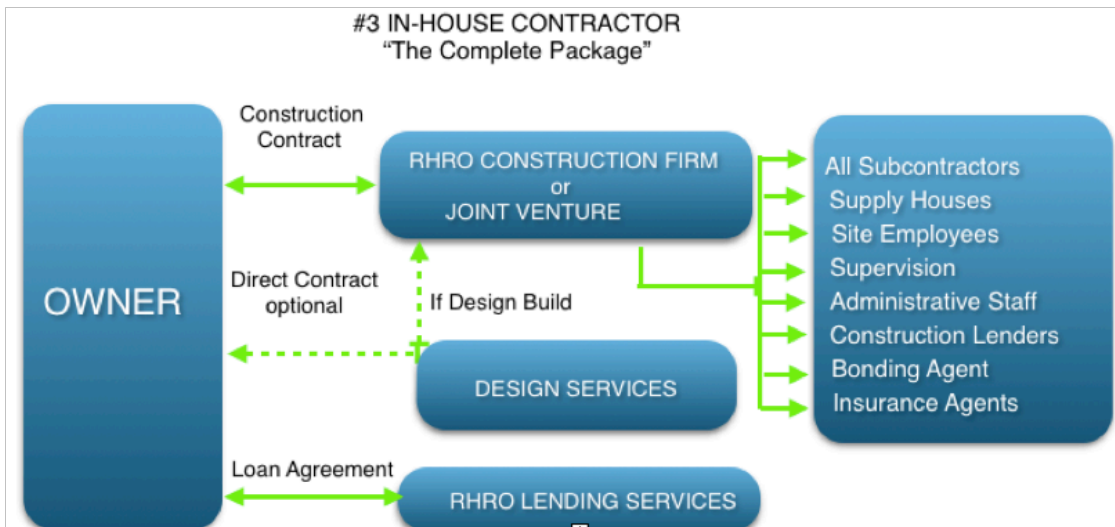
2. Construction Manager of Subcontractors Model–The Owner’s Agent

RRHOs who act as construction managers step in because they believe the private market is either nonresponsive or incapable of providing quality products that serve the needs of their clients. Traditionally these RHROs provide design services and professional construction management of subcontractors to build or rehab projects. The construction manager might also become very sophisticated in the use of specialized procurement mechanisms, like indefinite quantity-unit priced subcontracts and bulk purchase of common materials.



3. In-House Contractor–The Complete Package

The In-House construction RHRO offers solutions from the ground up. They incorporate a construction company and directly provide construction services be it new construction or renovated space. Sometimes this model is chosen because it best accomplishes multiple missions, for example: neighborhood employment or a social mission, such as in Habitat for Humanity. From a real estate production viewpoint, forming your own construction company is always the most complicated and risky option. You must learn to purchase and control inventories of materials and hire and supervise workers of different skill levels.



SECTION 2

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This middle section restates the introduction and methodology and offers a detailed review of three rehab construction models, the traditional rehab specialist, construction management of subcontractor and the in-house general contractor models. For each model the article provides: definition and staffing pattern, design roles and tasks for each major player, benefits and challenges, alternative models and finally recommendations for successful implementation.

Two options

There are two ways to digest this relatively large analysis of the effective rehab management systems used by successful rural organizations in 2015.

Option One—a focused read

If you are currently using one of the three models and there is a very low likelihood of moving to either of the alternative models, then we suggest you review your section, evaluate the recommendations offered by your peers for your model and consider implementation opportunities.

Option Two—an in-depth review

If your organization is considering expanding or adopting a new line of business then we advise reviewing the entire document. Pay special attention to the recommendations for implementing and operating each of the models.

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2.1

Traditional Rehab Specialist Production Model

Overview

Traditionally, the RHRO enters into an agreement with the income-qualified property owner to package or provide funding, design, procure and oversee renovation for a project that satisfies both the owner's and funder's standards. It is not unusual for highly skilled, well computerized, administratively supported rehab specialists to complete fifty, \$30,000 units of renovation a year.

Staffing Patterns for Rehab Specialist Model

- Rehab Specialist (On Staff Or Subcontracted)
- Intake Specialists
- Program Manager

Secondary Actor

- Lender or agency

Rehab Specialist's Responsibility

The rehab specialist is truly a Jack or Jill-of-all-trades. This individual is familiar with old houses and how to rebuild them. They use computer programs to write specifications to bring the structure into conformance with a set of program standards, be it code, a financing standard, an energy efficient standard, an accessibility standard or a special need standard.

Rehab specialists also use computers to estimate cost, prepare bids on behalf of the owner, advise the owner in selection of a contractor and approve work and payments on behalf of the lender. To facilitate the process the rehab specialist must develop a pool of superior general contractors who are willing and capable of carrying out the work.

Rehab Specialist's Tasks

Develop and prequalify a contractor pool

- Maintenance of database of specs and actual job costs
- Creation of code-compliant work write-ups
- Production of bid packages and plans (if required)

- Assistance with contractor selection and contract awarding
- Construction monitoring, including progress conferences between the owner and contractor(s), review of draw requests, review of change orders
- Preparation of punch lists and securing of lien releases
- Contractor warranty follow-up

General Contractor Responsibilities

The key to great success in the rehab specialist model is a pool of great contractors. The contractor is charged with completing the work on time, as specified and within the budget.

Their administrative, technical and social skills will determine the outcome of all owner-occupied programs. The contractors must respect their clients, be businesslike and technically efficient.

In most owner-occupied programs there is a significant increase in the paperwork required to receive a payment and in the affidavits required to warranty the work. Successful contractors will have exceptional skills at cash flow management, office administration and subcontractor coordination.

General Contractor Tasks

- Reconstruction Of Building
- Property Inspection
- Supervision and Coordination Of Work
- Job Site Safety
- Project Scheduling
- Preparation Of Payment Requests
- Warranty Of Work

Homeowner's Responsibilities

The role of the property owner can vary in three levels of participation

Many grant programs provide a service with a great number of rules, procedures and requirements that eliminate most of the homeowner's responsibilities except for signing off on various contracts, financing and inspection checklists

In the most common rehab specialist program, Owner-Occupied Home Improvement, the owner is an active contract signer and director of the team that designs, contracts for and helps execute the home improvements.

At the extreme are "Streamlined" programs that require extensive owner activity. The owner must solicit bids, review proposals, select a contractor and oversee the construction work. The rehab specialist acts as an agent of the funding sources. In these programs a secondary goal is to empower the owners to carry out the reconstruction process.

Homeowner Tasks (traditional)

- Calling Various Actors To Speed Up Job
- Showing Contractors The Home
- Selecting: Color, Texture, Pattern Of Finishes
- Preparing The Home for Reconstruction
- Inspecting Work In Progress
- Project Approvals
- Warranty Inspections

Homeowner Empowerment tasks:

- Solicit Bids From Qualified Contractors
- Review Submitted Proposals
- Select A Contractor
- Oversee The Construction Work.
- Project Payment Approvals
- Warranty Inspections and Corrections

BENEFITS AND CHALLENGES OF TRADITIONAL REHAB SPECIALIST MODEL

Benefits

With qualified staff, the rehab specialist role is relatively quick to set up. Once a pipeline of small projects is developed, a continuous flow of units can be maintained.

The RHRO has full control over design, construction, loan underwriting and often targeting of the housing resource.

The process has fewer steps so staff members tend to get better and better as time goes on.

Rehab specialists have been able to complete 25 units a year per full time equivalent in home improvement programs where each property must be individually financed, applications taken and approved and customized specs written.

Challenges and Threats

The main drawback to this model is finding the Jack or Jill-of-all-trades personnel who can take financial applications, inspect properties, not be overwhelmed by the extensive government paperwork, and recruit and oversee contractors, all while under the direction of a nonprofit board of directors. This person must exhibit a balance between administrative skills and renovation or field skills.

If the rehab specialist model is not managed well, it can result in very low unit production and extremely high overhead. It is not unusual for a three person staff to produce less than 10 units a year. That staff to product ratio is unacceptable.

2.1a

Rehab Specialist Alternative Models

2.1a1

SUBCONTRACT REHAB SERVICES

In this alternative to the traditional rehab specialist model the activities required for efficient rehab production management are split between a rehab specialist under contract to provide construction management and design augmented with administrative backup by the agency.

How One NeighborWorks® RHRO Uses The Subcontract for Rehab Services Model

“The rehabilitation consultant participates in the initial site visit, but it is scheduled and facilitated by a staff member.”

“The consultant walks through the home with the staff member, pointing out areas of concern & suggesting repair/ replacement options. S/he then helps communicate project needs to home owners & works with the home owner & staff to finalize a scope of work, and to draft project specifications.”

“Staff remain the primary contact for customers throughout the project. The consultant is dispatched for progress inspections or other site visits by a staff member. Our Loan Program Assistant handles; the environmental review, construction documentation, and customer support with bidding. Our office sends specs to contractors & invites them to contact the homeowner to arrange a time to view the property to submit a bid. The Loan Program Assistant also helps with loan processing and servicing activities, so the administrative work load, while it does fluctuate, is more stable throughout the year.”

The Benefits Of Subcontracting for Rehab Specialist Services According To A RHRO:

“This model allows CHT to pay for just the amount of construction expertise we need. In the Vermont winter, we might only need 10 hours per month of time from the consultant. In power peak season we need as much as 20 hours. The consultant model allows us flexibility. Our consultant can (and does) fill in time with other jobs.”

“The construction consultant’s focus is on helping to create a scope of work, developing specifications, and performing progress & final inspections. S/he has to be aware of funding requirements. Agency staff functions to insure environmental review compliance and to identify key areas of concern in a given project (for example, historic or archaeological preservation, wetland impacts, etc.). “

“This contractual arrangement allows us to contract with individuals who have deep construction knowledge, but may not have extensive administrative or computer skills.

What Are The Costs?

“Our most complex projects have used approximately 40 hours of rehab consultant time, but the average is much closer to 12-20 hours. Our contract calls for an hourly rate plus expenses at 1.1 for rehab construction management tasks assigned per structure with a annual not to exceed number.”

Key Success Points for The Contract Rehab Specialist Model: “There are some challenges in managing a contractor vs. an employee, particularly with regard to scheduling and priorities. Communication is key, and it is important for a staff member to be the point of contact for the customer to alleviate confusion”

“When a home owner is unable to reasonably undertake the bidding process, or when a project involves a more complicated rehab situation, we facilitate a bid meeting on behalf of a borrower.”

“Even though the hourly rate for a construction consultant is much higher than it would be for a staff member, for us the savings was notable”

“If our volume expanded (from 25 units per year now) we would probably hire a second consultant and divide the projects based on geography to minimize travel time rather than higher an employee to do rehab management again.”

2.1a2

BECOME A 203K SPECIALIST RHRO

Throughout the country there are acquisition and rehab programs where certified HUD 203K specialists provide similar Rehab management services for a sliding fee. The RHRO construction managers are experienced and may qualify to provide services for federal mortgage insurance providers. Here is the federal base cost table and a list of typical responsibilities.

203K Fees:

REPAIR AMOUNT	CONSULTANT FEE
\$5,000–7,500	\$400
\$7,501–15,000	\$500
\$15,001–30,000	\$600
\$30,001–50,000	\$700
\$50,001–75,000	\$800
\$ 75,001–100,000	\$900
\$100,000 *	\$1,000 *plus

203K Tasks:

- I. Site Visit: Consultant meets the borrower at the site. A general examination of the work to be done determines if the project is feasible. If feasible, Client signs Consultant Agreement and pays the Consultant fee
- II. Consultant prepares a Work Write-Up Clear, concise project specifications Construction cost estimate HUD draw request forms Contractor Bid packages Preparation of loan packages
- III. Distribute Work Write-Up Packages to; Borrower, Lender, Contractors
- IV. Selection of a Contractor by Borrower. Some lenders maintain a list of contractors that have met their qualification criteria.
- V. Loan Closes Repair funds are placed in escrow. Remodeling begins.
- VI. Consultant Performs Draw Request Inspections
 - 1st Draw–Consultant insures permits were issued.
 - 2nd and 3rd Draw–Draw request inspections are performed as work progresses.
 - 4th Draw–A punch list is established.
 - 5th Draw–The project is closed out and warranties and lien releases collected.

2.1a3

ACQUISITION AND REHAB FOR SALE OR RENT

A Rehab Design-Build Alternative

The rehab specialist model has been extended to neighborhood development goals that involve property acquisition such as increasing homeownership and stabilizing the rental stock. In acquisition programs the RHRO becomes the owner. This model eliminates a third party and may prevent delays caused by communication, approvals and property owner education. The skilled rehab specialist purchases, designs, renovates and turns over to the marketing staff either for-sale or rental residences. This in-house version is a design-build model provided by a single rehab specialist.

Acquisition tasks:

Rehab specialists evaluate and recommend properties for potential purchase based on feasibility criteria. The occupant is not identified until after the rehab project has been completed. In these versions the rehab specialist or project manager fulfills all of the owner tasks. RHRO staffs analyze and purchase property, create a work writeup with cost estimate, solicit either subcontractors or general contractors to complete the work and then market the property to help stabilize the neighborhood.

ACQUISITION FOR RENT OR SALE ALTERNATIVE BENEFITS AND CHALLENGES

Benefits:

On the acquisition/ rental side, the rehab specialist operates much more independently, selecting, writing up and improving property to comply with pre-established agency standards, often with great efficiency. Rehabilitation specialists were easily capable of completing a unit-a-week, year after year.

Challenges and Threats:

You can lose money.

If you are doing acquisition and rehab for sale the common term for this is flipping property. Many TV shows extolled the virtues, but is easier to lose money on a flip than it is to break even. Someone has to understand the micro-housing market of your street and three-block neighborhood. The basic rules of location, location, location, still apply to your appraisals.

You can purchase wrong

In markets that are relatively active you may only have a few days of protected bidding from government sites or immediate response at auctions to make a buying decision. There will be jobs where you don't notice that the floor joist in both the kitchens and in the baths have rotted away from years of continuous leaks.

Best Opportunities

Owner-Occupied Home Improvement Program is the most traditional use of this model. Many CDBG or HOME financed programs efficiently eliminate code violations, energy inefficiency and sometimes allow some general property improvements using this model. NeighborWorks® rural organizations produce more than 6,000 units a year for income eligible homeowners.

Acquisition and Rehab for Resale can be very efficiently operated using the rehab specialist model. The same skills that allow the rehab specialist to identify the scope of work required can be used to evaluate properties to acquire. So the physical development process is very similar and the group has much more control over the work because it owns the property during the construction phase. Most of the differences between home improvement programs and these for-sale programs are the work needed to meet additional standards necessary to market the completed structure to income eligible clients.

One of the most efficient uses of the rehab specialist model occurs in Scattered Site, One to Four Unit Rehab for rentals. Here the advantages of ownership along with repetitive tasks and established volume can create very high volume operations.

2.1b

Recommendations for Implementation and Successful Operation for Rehab Specialist: Production Model

Use Tablet Computers and specialized software:

Spec writing and cost estimating as well as client tracking should be computerized to gain efficiency. Scheduling is optional. for client tracking most organizations use a database that will allow you to track applicants along with geographic information. Don't use more than 12 input milestones or the process of tracking will become a burden itself. for spec writing and cost estimating consider; Housing Developer Pro, RESPEC, or One Roof

"I once observed a 3 person team of a good field inspector, a client scheduler, and a high quality software operator complete 24 single family work-write-ups including full inspections, specs and cost estimates, in a week! The field personnel did put in significant overtime, maybe 70 hours each, times 2, that's 140 hours divided by 24 jobs is about 6 hours per home. Add in 40 hours for administrative tracking and inspection scheduling for a total of 8 professional hours per job. Importantly, this team created an entire year's worth of work writeups for one rehab specialist in a single week. So put down your Word checklists and enter the 21st century, get trained on a spec writing and cost estimating program management application."

Create and Follow Protocols using Approved Documents:

"Document, document, document" "Guidelines, processes and requirements for participating contractors are very useful"

"Disclosures to families regarding organizations roles and responsibilities versus homeowners and contractors "

"Weekly reports, monthly architect reports, daily logs from GC and three week schedule are very important to have so we all know where the projects are at any time during the construction period."

Create a Real Training Budget:

\$6,000 per annum is a good start. If you have hired beginning individuals who were construction workers they may feel uncomfortable using the computer for sustained periods. It is imperative that the training budget be sufficient to master these new skills and tools. Training opportunities prevail. The Neighborhood Reinvestment Training Institute offers a Construction and Production Management Certificate Program. The Trainers Guild offers certification and extensive written tools after attending approximately 4 days of classroom training and passing a short quiz at the end of the each session.

Provide Adequate Inspection Tools

Get with it—it's the 22nd century. You don't build houses with handsaws and slotted screwdrivers, and you don't do inspections with a clipboard and a flashlight. An essential set of inspection tools includes:

- laser tape measure for rapidly taking room dimensions
- fiberglass ladder
- set of binoculars,
- cell phone camera,
- moisture meter,
- disposable or washable coveralls,
- HEPA filtered respirator and goggles.

To this basic kit the most efficient shops add between \$200 and \$1,500 worth of hand and electronic tools that accelerate and make the inspection procedure more accurate. Shops with specialized missions such as energy efficiency or lead hazard inspection and mitigation evaluation recommend many additional tools i.e. blower doors, carbon monoxide monitors, XRF analyzers, infrared cameras and other specialized equipment.

Edit a Great Computer Inspection Checklist

The key to simple and efficient use of all work-write-up software is the creation of a quantity input form, or checklist. The Rehabilitation Specialists can record scope of work, locations, quantities, and unusual conditions. The program Specific Checklist for your jobs must undergo significant refinement to make it of maximum value for your staff. It must be field-tested.

Use Lots of Photos

“Cameras are used to document prior conditions and after remedies. Photos are kept on file of building conditions before rehab, and condition of home environment upon completion of work.”

Photographs must be used to document all questionable items whether it is improper material, a low quality installation, a difference of opinion or a misunderstanding of a specification. This is your best defense, proof of accomplishment and environmental record. Start using lots of photo documentation this week.

Use Post Job Evaluations

It is important that the record of job performance be maintained. In a sense, it should be the RHRO's “pay” for a job well done. People who are afraid of evaluations may be offering poor performance and resist. Some people are just phobic of all peer review. Evaluations provide constant feedback as to how are you doing and allows rational mid course corrections.

Establish Direct and Continuous Owner/RHRO Communication

“Disclose, disclose, disclose”

“Never make promises”

“Require homeowner to approve work and authorize all payments to contractors”

“Repeat, repeat, repeat “

2.2

Construction Management of Subcontractors Model

Overview

In this model, the RHRO provides a construction manager who functions as an advisor to coordinate the owner's subcontractors and material suppliers. There maybe multiple owner contracts with architect, construction manager and subcontractors.

The construction manager (CM) prepares a work write up per the RHRO's standards and verifies financial feasibility. The CM solicits bids and recommends contracts with subcontractors on behalf of the owner for construction services. The owner enters directly into the contracts with the subcontractors. The role of the construction management team is to act as the owner's agent throughout the renovation.

STAFFING PATTERNS FOR CONSTRUCTION MANAGEMENT MODEL

Primary actors

- Rehab Specialist – Design
- Construction Manager
- Subcontractors
- Property Owner

OPTIONAL ACTORS

- Major Material Supply House
- Owner's Sweat Equity Workers
- Volunteer Workers

OWNER'S ROLES

In the Construction Management model the owner has an expanded role because each subcontract or major material purchase will be bid or negotiated and offered to the owner to be signed. Prior to starting construction, the RHRO must decide on the form of relationship with the owner. Should they remain the owner's agent or should they become the contractor? In both roles the owner might assume all liability for cost overruns and all benefit of cost savings.

OWNER'S BASIC TASKS:

- Deciding on construction manager's role
- Team coordination
- Construction monitoring
- Project approval

OWNER'S ENHANCED TASKS-SWEAT EQUITY:

“Other than LBP, we let homeowners do whatever they feel capable of, as long as it is legal by code”

“Homeowners and volunteers; change windows, replace siding, remediate rot, install flooring, paint, clean up, and dig trenches.”

“There are some tasks that don't make sense for homeowner work. Gutters are a good example; a pro can install a seamless product cheaper than a homeowner can assemble gutter and downspout DIY sections.”

REHAB SPECIALIST TASKS:

- Develop and prequalify subcontractors and material suppliers pool
- Maintenance of database of specs and actual job costs
- Creation of work write-up
- Production of the bid packages and plans
- Assistance with subcontractor selection and contract awarding
- Construction monitoring, including progress conferences between the owner and subcontractor(s), review of draw requests, preparation of change orders
- Preparation of punch lists and securing of lien releases
- Contractor warranty follow-up

REHAB SPECIALIST DESIGN ROLES

The design role depends on the extent of the work involved. Most Construction Management companies use their own rehab specialist to provide work-write ups, feasibility screening and subcontractor bidding documents. This creates a Design-Build system in selective rehab jobs.

In maintenance type construction they may use a simple list of typical repairs.

In substantial rehab over \$50,000 an outside architect or engineer may be consulted to create formal plans and specifications

REHAB SPECIALIST CONSTRUCTION MANAGEMENT DESIGN TASKS:

- Development and prequalification of a sub-contractor pool
- Maintenance of database of specs and actual job costs
- Creation of code-compliant work write-up and project estimate
- Production of the bid packages and simple floor plans
- Sub- contractor selection and contract award

REHAB SPECIALIST CONSTRUCTION MANAGEMENT ROLES

While specific construction management activities vary from project to project, there are two basic roles the construction manager offers once the bidding is complete. In one, the construction manager remains in an advisory role, merely managing the construction contracts on behalf of the owner without financial responsibility.

In many cases however, the construction manager will also provide the general conditions activities for all of the

other subcontractors in order to facilitate the work. In these relationships it is extremely important to clearly delineate the roles, responsibilities of the construction manager for construction administration tasks.

REHABILITATION CONSTRUCTION MANAGEMENT TASKS:

- Cost and quality control
- Subcontracting all work
- Purchase major materials (optional)
- Coordination of work
- Total control of project time, cost containment, and usually, quality control
- Review of the sub- contractor's payment requests
- Supervision and control job progress

SUBCONTRACTOR ROLES

Licensed subcontractors carry out the work while being coordinated by the construction manager on behalf of the owner.

SUBCONTRACTOR TASKS:

- Provide labor, material and supervision
- Apply and receive permits
- Submission of shop drawings
- Preparation of payment requests
- Warranty of work

2.2a

Construction Management Alternative Production Models

2.2a1

INDEFINITE DELIVERY, INDEFINITE QUANTITY CONTRACTS (IDIQ)

This bidding proposal calls for a fixed price for a quantity to-be-determined of construction components over a fixed time. They are used when the RHOR can't determine, above a specified minimum, the precise quantities of supplies or services that the entire program will require during the contract period. Annual or 24 month IDIQ contracts streamline the subcontracting process and speed service delivery. These work exceptionally well with highly automated work write-up programs

“We operate the largest construction company in our market. We build over 120 units a year with a salaried contractor on our staff. This lead person is supported by two inspectors who review and approve subcontractor work and requisitions.”

"We use a bidding and procurement system that is formally called Indefinite Delivery Indefinite Quantity. We procure approximately 17 subcontractors and primary suppliers once a year. The subcontractors and supply houses agree to hold an established unit price during that period. Only if there is exceptional event that causes a significant increase in the cost do we consider renegotiation which must be approved by the board."

2.2a2

SWEAT EQUITY REHAB

A number of RHROs we spoke with promote and coordinate owners' sweat equity. Family members and skilled but gracious friends are welcome to help reduce costs by completing activities during the renovation.

Construction Management Model Benefits and Challenges:

Benefits

"A combination of, in-house supervision, annual subcontractor unit pricing, and bulk purchase of materials allows us to provide a two bedroom, one bath replacement home for approximately \$45,000 in 2015." This is in Texas in 2015."

It Saves Money for The Homeowner

"They are able to take on many labor costs them selves. We have saved as much as \$50,000 in labor costs on a single job."

We Can Help More People

"We are able to take on projects that would be impossibly expensive otherwise"

Pay for Staff Time:

"USDA Rural Development reimburses us for our staff time spent providing TA and other service"

It's Fulfilling

"Self Help Rehab can be a ton of fun, and can provide some truly moving success stories."

In moderate-volume shops it is efficient to contract directly with ten to fifteen "captured" subcontractors. This way the agency receives the wholesale price for plumbing, electrical, mechanical, roofing, concrete, etc. The rehab specialist and the agency also have a tremendous increase in control over the contracting process and its execution.

The additional cost and project coordination required by the construction management model is well spent when the return is lower hard cost for speedy jobs completed to your excellent specs.

The construction management model allows you to find the best buys and subcontractors over a long period of time and integrate their suggestions into the design.

Construction management models have offered hard cost savings over both negotiated and competitive bids. Savings result from multiple rounds of value engineering, bulk purchasing of materials, subcontractors and excellent results.

Challenges and Threats

In general, the construction manager model adds an additional layer of both responsibility and associated liability to the RHRO.

When the rehab specialist begins to take on the role of the CM there is potential for becoming overwhelmed and for loss of quality time and budget control.

Highly skilled rehab CMs may be extremely difficult to find, but the required additional salary costs have proven to be very effective in increasing production and completion of difficult tasks.

“Using IDIQ Your annual procurement must be perfectly aligned with federal guidance. Losing bidders may attempt to invalidate your process, bring legal suit or apply political pressure when an entire year’s worth of work is assigned to a competitor.”

Warranty work

“As the builder we are responsible for warranty requests whether valid or not. We’re beginning to address this by setting aside approximately 10% of our net margin for customer service expenses and by purchasing a 2/10 warrantee for each property.”

CONSTRUCTION MANAGEMENT OF SUBCONTRACTORS BEST OPPORTUNITIES

Tight construction markets:

The Construction Management model works well in economically tight markets where general contractors are all previously committed or uninterested in your project because of its size or special requirements.

“Where competing contractors will not offer a high quality, energy star, smart green, product at a reasonable price.”

“Higher volume nets the best return from a contractor on salary. We can divide the costs by 100 units a year. If you’re only building 10 units a year you may have to consider a part-time arrangement with a salaried contractor.”

Acquisition and Rehab-Agency Owned:

It is also a recommended option for all Acquisition and Rehab programs where the agency is the owner. It can help offset perceived excessive construction risk which contractors may pass on to the owner in the form of extremely high bids.

Owner occupied rehab:

A very skilled rehab specialist can use a modification of the Traditional rehab specialist model to become an In-House construction manager subbing out all of the activities to a prequalified pool of subs. This subcontractor model has reached dramatic effectiveness in Owner-Occupied Home Improvement.

RHROs who are not be able to afford a full time In-House rehab specialist may consider entering into a construction management contract when operating owner occupied home improvement programs.

2.2b

Recommendations for Implementing and Operating a Successful Construction Management Operation

Use a formal Client-RHRO Contract:

In this recommendation, the RHRO enters into a formal contract for services. For a fee or other consideration the RHRO provides loan packaging, design and construction management services to the client. The contract clearly delineates the roles of both parties, the expected actions during the contract period, and the ways to terminate the relationship.

This formal relationship helps the RHRO to clarify who the client is, where the responsibility for decisions rests, and many times protects the agency from clients who do not fulfill their responsibilities.

Relocate Occupants (when required):

In all jobs where extensive lead hazard reduction or asbestos abatement is contemplated, most programs require the owner or occupants to relocate during the most dangerous phases of the rehabilitation. This clearly disturbs the occupants' daily activities and puts a lot of pressure on the contractor to work continuously and rapidly. Fortunately, working in vacant units can be much more time efficient if the contractor pre-stages and coordinates the job effectively.

Establish Feasibility Budgets Early

Review the client's financial position, credit history, equity, property value, and other loan underwriting criteria prior to the construction specialist investigating the physical condition of the property. Writing specs blind, meaning 'without a budget', can lead to unrealistic expectations in homeowners and the necessity to rebalance the scope of work repeatedly until the job is within the financially feasible budget.

"The minimum standards-required work is the ultimate criterion of the minimum feasibility budget and many homes are not feasible and must be bypassed."

Require Extensive Preconstruction Conferences

Preconstruction conferences for winning bidders covering over 42 subjects are essential for well run jobs. A template checklist is available in the URC document set and the items covered should be formally noted. There are times when key subcontractors should be invited on specific jobs due to unusual demands. The pre-construction walk-through provides an opportunity to verify the roles and responsibilities of each of the actors during construction, identifying problems that may arise and possible solutions.

Revise the Database of Specs to match Subcontractor Offerings and Costs

Revise the specifications and costs in your library of component specs until you have created the best set of standard specs for your specific subcontractor bids and contracting style. Modifying the installed database is a tedious, detail-oriented job that must be completed prior to any professional and accurate use of all project management software.

“With IDIQs we operate the largest construction company in our market. We build over 120 units a year with a salaried contractor on our staff. This lead person is supported by two inspectors who review and approve subcontractor work and requisitions.”

Never Guarantee Volumes To IDIQ Subcontractors

While you may project what you believe to be achievable volumes, you should never warrant or guarantee that any work will be authorized under the unlimited quantity contract.

Demand Key Personnel Transitions.

It is recommended that contracts between subcontracts and RHROS have a clause requiring the contractor to notify if key personnel are being redeployed and allows the RHRO to participate in a transition where both the key personnel and the replacement personnel work simultaneously

Review Project Performance With Subs

It's common to walk away from a completed project and not have a good understanding of how performance was perceived outside of each firm. Post project reviews identify areas where subcontractors can improve and identify areas where they excelled. It allows both organizations to make practical adjustments to day-to-day operations

2.3

In-House Contractor Model

Overview

In this model of construction, the RHRO becomes the general contractor as a non or for-profit corp. They may assume responsibility for the entire construction task or act as a specialized subcontractor to an arms-length general contractor. Some programs subcontract all activities, but under a wholly owned general contractor firm.

Staffing pattern for in-house construction

Primary actors

- Project Manager
- Superintendent
- Job Cost Accountant
- Subcontractors
- Material Supply Houses
- On-Site Labor (Optional)
- Property Owner
- Architect Or Rehab Designer
- Lender

Secondary actors

Insurance Agent

- Bonding Agent
- Tax Accountant
- Corporate Lawyer
- Temporary Agency
- Safety Officer

Design Roles

The design depends on the extent of the work involved. In-House Construction companies often use their own staff to provide Design-Build services in selective rehab jobs. In maintenance type activities, they may operate off a simple list of required repairs. Many RHROs become specialized subcontractors, providing energy efficiency upgrade, accessibility improvements or lead hazard reduction. These specialized contractors may operate off an itemized list of materials to be installed and final product standards. As the jobs get larger or where new construction is contemplated, most Programs will purchase architecturally prepared blueprints and specifications. Many RHROs will enter into a “partnership” with a single architectural firm for a product or group of products such as townhouses or garden apartments.

Design Tasks:

- Predevelopment:
- Applying local codes and standards to owner’s “program”
- Preparation of conceptual drawings, preliminary and final plans, specifications
- Construction Administration Tasks:
- Field visitations
- Review of shop drawings, interpretation of plans and specifications and revisions
- Approval of payment requests and change order requests
- Preparation of punch lists, review of subcontractor claims
- Final inspection releases

Contractor’s Responsibilities

In this model the RHRO operates as the general contractor. If they are unable to pull permits, sympathetic general contractors sometimes allow the RHRO to “partner” the jobs. In addition to the traditional Construction Manager tasks, the RHRO takes on full responsibility for payroll and personnel hiring and scheduling. Job cost responsibilities often overwhelm companies who do not set up sophisticated computer-based systems. Purchasing and inventorying donated materials requires some agencies to have warehouse storage space. The need to transport people, equipment and materials from site to site may require multiple trucks and specialized rental vehicles. As construction becomes more automated, the most efficient crews will be outfitted with cordless equipment, pneumatic equipment and a healthy budget to rent specialized tools as required.

Contractor's Tasks:

- Procurement of labor and material
- Supervision and coordination of work
- Job site safety
- Project scheduling
- Submission of shop drawings
- Preparation of payment requests
- Warranty of work

Superintendent Role–Design Build

The In-House Construction model has the RHRO operating as both the designer and as the contractor. There is often no architectural oversight or contract administration and quality control is taken on by RHRO staff members and/or representatives of the financing organization. These development services may be provided to clients as rehab or repair services or they may be performed on property or housing stock owned by the Agency

Superintendent Tasks:

Investigating The Site/Property

- Setting The Design Criteria With Board
- Hiring Surveyors
- Hiring Design-Build Firm
- Establishing Cost Limitations
- Determining The Project Size, Use and Ownership
- Coordinating Legal Review
- Construction Monitoring
- Project Approvals

In-House Model Benefits and Challenges

IN-HOUSE BENEFITS**Control:**

In-House Contractor provides full control of the job, which can be helpful to promote a non -housing mission, i.e. to train ex-offenders in job skills or to maximize the use of volunteers.

Potential net income:

“In the past 25 years we have grown to provide \$50 million of construction per year. We do not accept projects under \$500,000 and most times look for projects 10 times that amount. If we estimate well, the job goes as planned and overhead is stable, we may earn 10 to 14% in profit, overhead, and general requirements.”

IN HOUSE-CHALLENGES AND THREATS

It Requires a Pipeline of Sufficient Volume Early

“You must understand your pipeline of work. If it’s not predictable I strongly suggest that you hire out construction. While construction firms without a social concern layoff personnel when work is unavailable, nonprofits do not. It’s important to have a continuous pipeline or jobs can stretch out until the next job appears.”

Start Up Costs are Significant:

One group that we interviewed identified a \$240,000 initial capital provided to their affiliated general contractor firm. This type of cash infusion is usually required to qualify for payment and performance bonding which is required on any federally finance job in excess of \$100,000.

Highly Skilled Staff Required:

“Hiring great leadership is the most important factor in success.”

In-House Contractor is the most demanding way to reconstruct property. The success of the model depends on exceptional skills of the supervisors, workers and accounting staff to effectively rehab homes that competes with the open market

Professionally Derived Job Cost Required:

Many RHROs have difficulty creating an accurate job cost system, and are therefore unable to document the economic benefit of their efforts or control the budgets of their jobs. Procedures to integrate cost estimating and actual job cost must be established prior to bidding work. The preferred financial system uses percentage of completion without paper transactions

“Successful firms must purchase, understand and use job costs and job tracking software.”

IN HOUSE BEST OPPORTUNITIES

Employment mission:

The In-House Contractor model is often used by Programs who have multiple purpose mission statements, for example, to develop housing and provide employment opportunities. This blending of missions should be considered by RHROs who have been unable to place trainees with established construction companies.

Specialized Subcontractor: Rehab Staff – 100% of Weatherization (WX)

The greatest efficiency is attained in sticking with one or two subcontract trade areas such as energy efficiency, plumbing or carpentry. Performing certain subcontractor tasks, some RHROs have become exceptionally efficient at special occupancy housing, home weatherization and energy/green programs. Skilled and experienced crews have learned to install windows, adjust furnaces, and blow in insulation more efficiently than private market firms.

Multifamily Housing:

One for profit general contracting firm which is wholly owned by a nonprofit RHRO has:

“completed single family homes, rehabbed existing multifamily properties and also assisted with new construction. They recently completed a 42 and 48 unit development and are working on another 42 unit multifamily project.”

Agency Pipeline:

If you have highly skilled and experienced construction managers on staff, the In-House Contractor can be used to lower cost, improve control and accelerate production in rehab and new construction in the workflow of the parent RHRO

2.3a

Alternative in house models: The Joint Venture

A number of RHRO have implemented the in-house contractor model by creating a joint venture or a partnership with an established construction contractor. Those of you who are successfully married and those who have been divorced will recognize both the advantages and weaknesses of long-term partnerships. The most common joint venture involves an affiliate or subsidiary of the RHRO, representing a disadvantaged nonprofit subsidiary contracting preference joining up with a very well established construction contracting firm. In the best of worlds this combines the specialized abilities of both firms and spreads the risk among the members. The joint venture carries out construction and development projects using a pooling of talent resources equipment and financing. If done correctly it can offer a shortcut without the growing pains to establish a \$1 million plus construction firm. But it must be done correctly with significant evaluation or you may find yourself in front of “divorce court” wishing that you ever met your partner. Challenges and threats to joint ventures

Challenges and threats to RHRO joint ventures

The RHRO joint venture must fit the corporate strategy of both parents and be completely agreed to prior to initiation. If you can not get it worked out in the pre-nuptials you cannot believe how difficult it’s going to be when you’re want to get divorced.

Joint ventures involve collaboration of two very different cultures and attitudes and motivations that require significant communication and understanding by all parties.

The IRS has significant rules relating to; construction services and capital interest, exchange of profits, taxable cash distributions and a number of other apparently esoteric but amazingly important requirements.

Decisions require a meeting of the minds between a number of parties which may slow down and obfuscate clear thinking.

Benefits of joint ventures

“This arrangement is scalable. As work ebbs and flows we are able to procure additional subcontractors without the requirement to hire employees directly and let them go when there’s not sufficient work.”

The RHRO can increase their area of operation and expertise, increase their ability to perform larger and more frequent projects, while spreading risk.

“Our expectation is that within a year we will receive a return of our invested capital and begin to see a consistent flow of nonfederal funding for our social enterprises.” “The RHRO may someday receive a profit in the form of nonfederal cash flow.”

The joint venture may benefit from future contracts and work provided by the parent firms.

The joint venture benefits from the specialized abilities of the RHRO to apply for and receive federal and state benefits, the joint venture receives the benefits of a mature job cost, accounting, human resource and taxation administration from a sophisticated parent.

“As it succeeds it can become a magnet for skilled community members.”

“There is a serious “brain drain” that siphons off many of the best and brightest often to larger cities in faraway states.”

Best uses of joint ventures

Informed disadvantage business organizations that have already applied for and received preference certification as SBA small firm, 8-a, minority owned, section 3, or other state preference in partnership with a moderate (15 million per annum) to large (50 million per year) local construction contractor. Where both trust and respect the views of each other.

Successful joint ventures achieve efficient workflow when there is alignment among the operations team, there's mutual trust, there's recognized leadership, based on open and constant information including financial reporting.

Successful joint ventures reflect an equitable profit\risk split based on clarity in both operational and administrative roles and responsibilities.

Recommendations for implementation and Operation of Joint Ventures

Get to know your joint venture partner by starting out with smaller projects of limited nature.

“Review your progress frequently and adjust your communications and legal agreement to reflect the developing reality.”

Joint ventures operate best when they have autonomy to function on their own to achieve the shared corporate strategy with objective criteria set up to self-monitor results.

All relationships come to an end. Limit the timeframe of the initial agreement and establish rules of the divorce if necessary while you are still in love with each other.

Successful joint ventures involve partners who understand each other's, financial strength, political influence, technical abilities, and respect each other's culture.

2.3b

Recommendations for Successful Implementation of the In-House Contractor Model

Purchase Adequate Specialized Insurance

“Evaluate the insurance coverage you need related to E&O i.e. Errors and Omissions insurance”

Once you sign a construction contract with an owner you're entitled to reasonable profit but to also accept significant responsibilities. One of the most common firewalls to mitigate risks imposed by requirements of laws and contract terms is the purchase and maintenance of targeted insurance protection. The most common are errors and omissions insurance for design flaws, commercial liability, workers compensation for both your supervisory and craft personnel, and completed operations for long-term protection against warranty suits.

“Make sure all your subs provide proof of insurance for workers compensation or when you're audited you'll be picking up their costs.”

Remember that a number of these policies are based on audited levels of exposure so every time a subcontractor doesn't give you a proof of insurance you're going to pay for it.

Create a Sophisticated Accounting System:

“Financial reports and forecasts are extremely important if you are serving as a GC vs. just taking on a management role of a project “

The accounting system should be established this same week that you create your corporate entity. Staff or outsourced personnel should begin using the accounting system immediately including preparing reports well before your first job. Bonding agents usually require substantial job cost accounting systems and they preferred that they be prepared on a percentage of completion basis. If you can't provide accurate and timely reports they usually require that draws be processed by a funds control agency.

Build an Accurate and Comprehensive Cost estimating system

“You must know and include in your estimates the true cost of your construction operations including all overhead”.

The easiest way to fail in construction is to lose track of your job costs. Startups have an unfortunate tendency to; underestimate costs, minimize contingencies, and overlook essential administrative costs. Combine these with a weak job cost system that analyzes data months after the event, and the result is a perfect formula for a quick bankruptcy.

Clarify Legal Issues Early

Will the construction company be a 509.a-3 support corporation of a nonprofit or a wholly owned for-profit organization?

Who will carry the contractor's license and what contract format should you be using?

Acquire Significant Startup Funding

“If the company is set up separate from parent will the parent be lending funds and at what terms?”

As a construction manager you are just facilitating the owner's payment who is financially responsible. If you act as a general contractor state laws often require you to pay the subcontractors and suppliers and provide release of liens to the owner prior to receiving your payments

Establish a Revolving Line of Credit

"How will you meet project financial needs, will it be through lines of credit?"

"You need to have cash flow for at least six weeks of your projected contract amount. The best way to address this is with a line of credit that is secured with collateral that does not require repetitive bank approval"

Contractors often wait 60 to 90 days until the draw is funded and monies are available. The suggested minimum line of credit is 90% of the top four months projected gross sales. So if as a beginner, your plan is to complete \$25,000 a month in the summer you will require a line of credit of at least \$90,000. As you grow into a more substantial firm with \$125,000 per month gross, your four-month criteria requires almost a half \$1 million. and remember it will go out and stay out as long as you continue to have active work. With interest rates relatively low this constant cost is not significant but it must be available for all work in progress.

Get Bonded ASAP to Grow

"Understand bonding capacity related to the size of projects you plan to undertake"

Some states have construction bonding requirements for contracts as low as \$25,000. The federal government requires payment and performance bonds for any contract in excess of \$100,000. With the average construction cost of a single family dwelling running at approximately \$200,000, operating without bonding capacity severely limits your opportunities.

There are two bonding markets. Below \$250,000 the underwriting is relatively lenient and easy to receive but expensive (4 to 8%). Over \$250,000 and reaching out into the tens of millions, the underwriting criteria are very well established. Bonding fees are relatively insignificant 1–2% but you either meet the criteria or you don't get a bond.

Define Your Market Early

"Think carefully about the scale and type of work that will be done. Will you specialize in a certain type of housing (SF vs. MF) or commercial? Will you only provide services for your developments and not for others? "

Register for Contracting Preferences

for many years your firm will qualify as an SBA small business because their definition of "small subcontractor" is up to \$14 million annual volume and \$32 million for a "small general contractor." Are you a small disadvantaged business? Can you qualify for hub zone, how about 8(a)? Depending on your intended market you should investigate and evaluate State preferences, University system preferences, and eventually tax credit contractor requirements. Can you firm qualify as a Section 3 contractor? All will help in being awarded work.

Buy or Lease Trucks or Trailers

The field is split on who provides the trucks and whether trailers or panel trucks are best. In South Dakota trailers cause significant damage to the pickup trucks and were not that beneficial.

My 40 years' personal experience as a renovation contractor suggests that a trailer or truck fully stocked with trade tools is essential to create efficiency. Each day, the tools are returned, the site is cleaned and the workers don't have to return to a home office.

You may have your personnel use their own trucks and reimburse them or purchase or lease. The best solution is basically a math problem answered by your tax accountant and your actual production. Which works out as least cost? Smaller organizations might reimburse for the superintendent's personal truck while larger organizations often invest in their own equipment.

Contact SBA to Get Started

Take advantage of SBA's online courses especially if you're going to do business with the government. The modules are self-paced easy to use and take about 30 minutes to complete. They are good for an orientation to the types of preferences bonding requirements and basic business planning characteristics.

Identify State Minimum Wages/and Benefits Pre-Bid

Many states have prevailing wage rates for both contractors and subcontractors at contract values as low as \$50,000. They may also have minimum benefits for health, retirement, sick and maternity leave that could easily double your labor costs.

Provide Tools for Energy Subcontracting

“ We supply blower Door, Thermal imaging, XRF, manometers, standard light carpentry/construction tools, cordless power tools, thermometer, Insulation blower machine”

SECTION 3

Focused Topics

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During our interview and exploration process, three ideas surfaced that were best served with a mini discussion rather than being embedded in the already large models of production section. We have extracted the comments and recommendations of rural practitioners in each area and added them to a mix of current recommendations and well-established guidance.

The three topics are:

Software and Technology

Management of Community Relations: Marketing and Quality Control

Budget Solutions

3.1

Software and Technology

Production Management Recommendations

A. THE DOUBLING CURVE

Gordon Moore, a cofounder of Intel was famous for postulating a law in 1965 that states, the processing capabilities of chips will double every 2 years. So far, this observation has proved correct, but like all geometric and exponential curves, it must reach a period when doubling will be physically impossible, at least for a while. This projection has profound effect on purchasing decisions of digital devices and software as the year 2020 approaches.

Digital devices and software have short useful lives, so never marry either one.

Computers, Cell Phones all digital widgets and today's software are only as good as the problems they solve today, and they are only as cost effective as the money they save this month.

B. DIGITAL DEVICES

"Computers are a necessity!"

Recommendation:

Tablets are best for now

"Laptop/tablet/smartphone." are all needed to operate with efficiency.

"Tablets provide a great tool for inspections, HERS ratings, Staff use them to save time from standard note taking."

Other Devices: Cell Phones are required for scores of project management functions. Large capacity backup devices are a risk mitigation requirement (when used weekly)

Scanner/printer devices are the norm for those documentation requirements that still demand paper versions as we head toward a nearly paperless business environment.

C. SOFTWARE

Software evolves rapidly. In the race for the lasting performer, 90% of today's entrants will fail. If you find yourself riding a dead horse, get off.

There are two basic kinds of production management programs: work horse programs and specialty apps.

Workhorse Programs

Workhorse programs make up the core of your daily software use. Microsoft Office Suite with word processing, spread sheet, presentation and task management section is the most ubiquitous of the workhorse suites.

You are buying continuity, consistency and upgradeability. In fact, you will soon be buying only a license for the use of software online. Almost all workhorse programs are migrating to an on-line platform.

Specialty Apps

Specialty programs (or apps) do one thing well. for example: Spotlight—it quickly searches all your directories for the name of a specific file. These applications are rated solely by the way they perform today and how much time they save you versus their cost. They are disposable programs. Apps may be shareware, freeware or paid, all immediately downloaded from the Internet. The Apple App Store, Google Play and others offer over 800,000 apps of which at least 40 or 50 are very useful in rehab production management.

In 2015 the specialty software category has been expanded to include sophisticated “software as a service” products and dedicated production management programs that do one or two things very well even though they won't fit on your phone/device. Construction project management, architectural rendering, scheduling and job costing are all available as standalone software or services.

Dragon Dictate

The first draft of this article was produced with the Apple computer version. A smartphone version is useful for quick back-and-forth messaging or emails.

My Radar

Who needs a jobsite weatherman when you can watch the clouds moving in or out in real time.

Yelp

A must-have to identify a diner with great food you would never, looking from the outside, stop at for lunch.

Zillow

Great to establish real estate values in the neighborhood and the transaction history of properties.

Tiny Scan

Quick and accurate way to capture paper documentation in the field and send it to the Cloud for team review.

Maps

Everyone needs a GPS program. How else would we get anywhere without Mary Magellan and Greta Garmin?

Financial Calculators

There are a bunch of financial calculators available. I haven't carried my HP 12 C in so many years I don't know if I remember its reverse polish notation, but the HP 10B II doesn't use that input style.

Make a list of the 20 apps you like best. Please send it to the author a note and he'll keep expanding and updating the recommendations.

Construction Management Applications:

Recommendations from the top lists of various construction blogs:

Construction Manager

A half million construction professionals can't be wrong. This app allows the transfer of maintenance logs, daily reports, project estimates and time sheets between headquarters and construction sites. It also gives estimators the ability to create on-site estimates for construction and repair projects.

Safety Meeting App

The App covers 34 trade types and can be accessed from phones, tablets or computers. It meets the Occupational Safety and Health Administration's required meeting laws and stores records electronically.

BuildCalc

An advanced construction calculator, BuildCalc is consistently voted one of the best for iPhone and android and is constantly updated to work with the latest phone-operating systems.

Architect's formulator

The Apple app features more than 400 formulas for electrical, carpentry and plumbing calculations.

BulldozAIR

Great free 4 star construction management software. Users can upgrade to premium for about \$50 a month, most construction managers will be satisfied with the free version. This app's highlights:

- Captures all project documentation in one place
- Allows offline access to documents
- Assigns tasks to internal team members and external subs
- Takes editable pictures and notes
- Offers a robust search function so nothing gets lost.

LEED Checklist (iOS \$0.99, android free)

This app makes a LEED checklist for new green projects or renovations. Enter information to a checklist and it will tell you what level of LEED accreditation it meets.

Receipt Bank

It is painful to collect little receipts, and then entering that data. Receipt Bank stores your receipts and turns them into data. Either export the data to Excel or publish it to your WorkflowMax account.

Workhorse Software Recommendations

The following activities rely heavily on computer use in the most cost effective offices. for each area we describe generic programs and identify brands of programs for each use. for shops that have not yet or are not ready to fully computerize, we suggest pre and semi-automation alternatives.

A. PRO FORMAS—AN X RAY OF YOUR PROJECTS

Program Type:

Spreadsheets

Recommendation:

Microsoft Excel® using extensive templates

Pre-automation Alternative

Word processing capabilities have expanded greatly so that limited mathematics functions can be effected on columns in Microsoft Word®.

B. SPECIFICATIONS AND COST ESTIMATING—OUR BASIC TOOL

Program Types:

Scopes of work and cost estimating, Work write-ups, Inspections draw tracking, change orders and bidding, Prevailing Wage, Estimating and Bidding programs

Recommendations:

Work writeups

“for writing the specs use Housing Developer Pro.”

Davis-Bacon cost estimates

Means cost data base (\$4000)

Energy Audits

“NEAT—National Energy Audit Tool—Wx energy audit information is input into this on single family homes and it provides a list of energy saving measures that we are allowed to do under the DOE (Department of Energy Weatherization Assistance Program) program”

Floor plan programs: Pick one that costs less than \$100

Home Designer Suite, Punch Home and Landscape, TurboFloor Plan 3D Pro.

Pre-automation Alternatives

Cost estimating manuals and Excel or Word checklists. Graph paper and a scale ruler for plans

C. DRAWS AND FINANCIAL TRACKING

Program Types:

Dedicated Project Management or Database

Recommendations:

Use a “Database to track funding, draws, expenses, contractor info”

”The AIA template for Excel that creates AIA forms G702, G703 within your computer” can be used for draw tracking on jobs with retainage and pending change orders.”

“We are able to track both administrative and construction costs using M IP software package which offers us real-time, integrated, reporting”

Pre-automation Alternatives:

Copies of word-processed draw and change order forms along with a hard copy pending change order file.

D. SCHEDULING: DESIGN AND PRODUCTION

Program Types:

List, calendars, Gantt chart, PERT charts, CPM

Recommendations:

Pick the one you will use and update weekly.

for large (\$1 million +) In house contractor jobs, a scheduling consultant should prepare a CPM diagram that is connected contractually to all sub contractor performance.

Pre-automation Alternatives:

Wall charts, word processed TO DO lists

E. COMMUNICATION AND COLLABORATION

Program Types:

Dedicated collaboration applications for design and construction team

Recommendations:

Coordination-Contractor’s Cloud, Email “AirWatch (allows us to access documents on our server on the road if needed)”.

Design Team-Plan Grid, Software as Service- project management; Clarizen; Sage 100,

Pre-automation Alternatives:

The telephone, texts, and group e-mail

3.2

Managing Community Relations-Marketing and Quality Control

REMEMBER THE #1 RULE – SOLICIT AND SUPPORT GREAT CONTRACTORS.

Contractors are your front line. If their workers do well in a positive way, your complaints will be minimized. “Do extensive research and find those with high quality reputations“

SET EXPECTATIONS EARLY AND LOW

If you agree to send a work-write-up on Tuesday and you don't finish until Friday, you're a bum. If you promise to be done on Tuesday and you're done Monday, you're a hero. Remember- Under commit and over produce.” Don't make any promises at the initial site visit”

COMMUNICATE DIRECTLY AND CONTINUOUSLY

“Clearly communicate, roles, responsibilities, and steps in the process so all parties understand prior to commencement of the work.” “Coach and inform homeowners on choices and requirements”” Be open and honest with the contractor and homeowner. Put everything on the table- good, bad and ugly.”

DOCUMENT, DOCUMENT, DOCUMENT

Use photos, signed statements, 3rd party contracts and memos of understanding. Document before and after with photos.” Be sure that the photos are taken from the same (or similar) view.” ”Keep a communication log.”

STEP ASIDE QUICKLY

When a disagreement escalates, move quickly to a third party arbitrator or mediator. RHROs will always be perceived as part of the system that caused the problem, not as a neutral problem solver. ” If client chooses not to have work completed, have them write it and sign off on it and put in their file. Staff can later add notes on why client chose not to do something. Require client to sign an indemnity agreement. “

JUST SMILE ANYWAY

Some people are just not happy. Often the cause is personal and internal, not external. These causes can make them very difficult humans. It is just part of the job. Smile and know there is at least one person every month who will truly enjoy and appreciate your services

DEMAND QUALITY

Your reputation is only as good as your job quality. Clear specifications, thorough work-in-place inspections and enforced warranties will lead to quality

3.3

Budget Solutions

Rehabilitation costs of common repairs have far outstripped available budgets.

According to the Remodeling 2015 Cost Versus Value Report (“© 2015 Hanley Wood, LLC. Complete data from the Remodeling 2015 Cost vs. Value Report can be downloaded free at www.costvsvalue.com.”) the national average construction cost for five mid-range projects are as follows; reroof \$19,528, replace vinyl Windows \$11,198, replace steel pre-hung door \$1230, minor kitchen remodel \$19,226, remodel a three-piece bath \$16,724. They total \$68,904 and we didn’t touch the heating or the electrical systems.

So how can you provide \$75,000 worth of work with that \$25,000 budget? Here’s a list of techniques to try:

Specify “Perfect” Materials: **Savings of 10–50%** of Material Costs

Perfect materials have, low-cost, very long life, and have very low or nonexistent operating costs. Components that meet these three criteria vary by geography and local supply houses. Great rehab construction specialists and construction managers are constantly specifying local sources of perfect materials.

Provide Construction Management Of Subcontractors:..... **Savings of 5%–18%** of the Entire Job Cost

The elimination of the general contractor’s profit and overhead must be offset with additional rehab specialist and administrative costs. Typically RHR house staff can be used to provide significant savings.

Use Indefinite Delivery, Indefinite Quantity (IDIQ) Subcontracts:..... **Savings of 20%–50%** per Subcontract.

Significant price concessions are available to RHROs who aggressively procure high volume, repetitive task contracts with smaller to mid sized subcontractors. The unit price for 100 squares of roofing or 12 water heaters or 70 replacement windows installed, from a single source, will be much lower than the installed price of a single item bid through a GC.

In-House Contractors–Use Piece Workers: **Savings of 5%–20%**.

In-house labor cost must be multiplied by an employer’s burden factor of 18%–33%. Piece workers are available in most markets to; paint, hang and finish gypsum, haul debris, and perform final cleaning. These self-employed workers exhibit high skill in a specific sub trade. They benefit by earning very high hourly equivalents, unattainable in salaried positions. The RHRO benefits because it is not responsible for all employer burden items.

Maximize Donated Material:..... **Savings of 50%–75%** of Material Cost.

Often RHRO or low income persons are eligible to purchase items at reduced cost from donation warehouses. Organizations have also set up direct charitable relationships for typically required items.

Volume Purchase Materials:..... **Savings of 10%–25%** of Material Costs

Volume material purchase agreements: Standardized items, like kitchen faucets, water closets, hardware, kitchen cabinets, exterior doors. floor finishes and water heaters can be purchased at volume wholesale prices under master contracts. and only delivered as needed.

Leverage Sweat Equity:..... **Savings of \$500–\$42,000** Per Unit Total Cost

Many of the rural programs require one hundred hours of sweat equity. In some instances highly motivated owners have leveraged the funds fivefold by providing almost all of the labor and only purchasing materials.

Hire Volunteers: Savings of \$500–\$10,000 on Total Project Cost

It's important to "hire" volunteers who will actually add value above the additional supervision and material handling that may be required. Examples that work well include: apprenticeship training programs, court appointed" volunteers", retired but still licensed craftspeople. Sometimes well orchestrated one day events providing, landscaping, exterior painting, and other projects conducive to mass influx can be cost-effective.

SECTION 4

Thanks and
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All Who Contributed

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Our contributors have walked the path and achieved multiple goals in service to our clients. Listen to their advice and you will achieve success faster with less pain.

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