

BUILDING *a MID- to LARGE-SCALE* SPECIALTY COFFEE ROASTING PLANT

A Practical Approach to an Epic Challenge



PART 1 OF 2 * PREPARING *to* WORK

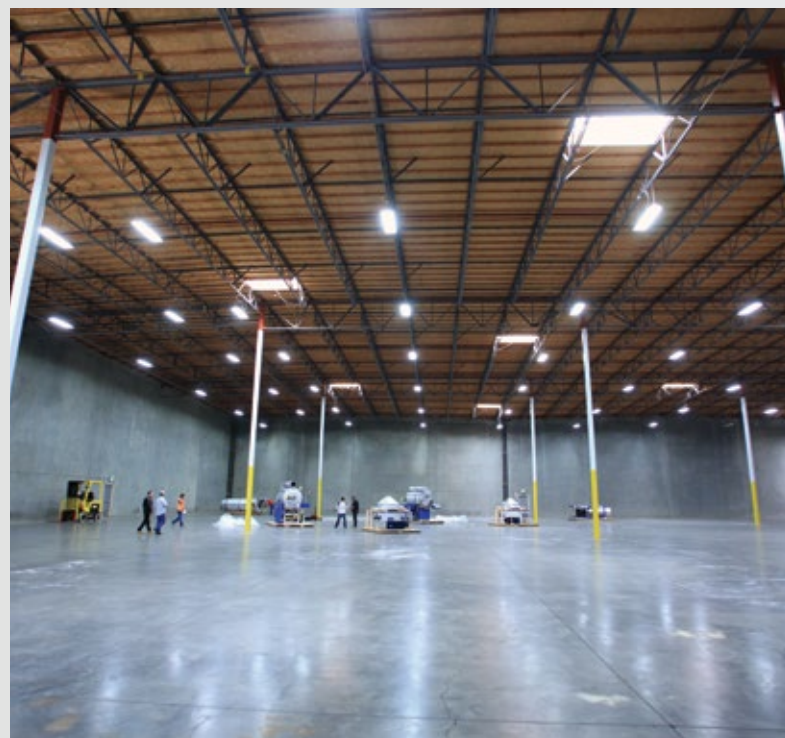
By Andi Trindle Mersch

MORE THAN 2,000 YEARS AGO, one of history's greatest thinkers somehow cut the master key to successful project planning when he wrote, "First, have a definite clear, practical ideal; a goal, an objective. Second, have the necessary means to achieve your ends; wisdom, money, materials and methods. Third, adjust all your means to that end."

This straightforward directive, attributed to the ancient Greek philosopher and scientist Aristotle, aptly

applies to the monumental task of building a specialty coffee roasting plant. If you follow it, drink a lot of coffee along the way, and heed the words of Brett Israelson of Kaldi's Coffee Roasting Company in St. Louis to "prepare to hyper-age at a rate previously unknown to mankind," you may actually be prepared—practically and emotionally—to survive the inevitably longer-than-you-think journey.

CONTINUED ON PAGE 24 ►



The crew at Philz Coffee during construction of the company's Oakland, California, roastery. | Photos by Ramin Lee



La Colombe head roaster Chris Miller inside the company's new roaster. Photos courtesy of La Colombe Coffee Roasters

Assuming that most who embark on this journey want to do more than simply survive, this two-part series is intended to provide a practical methodology to guide you as expeditiously as possible from the idea of building a roasting plant to the reality of operating one. This first installment details the initial steps of the planning process—developing a master vision plan and preparing to begin work. Part 2, which will appear in *Roast's* March/April 2017 issue, will cover budget development, design, and the multiple components involved in implementing that design.

Our focus in this series is on mid- to large-sized specialty coffee roasting plants expecting to process 1 million or more pounds annually, roasting plants where green and roasted handling systems are generally required in addition to roasting machines. That said, I expect there's plenty of overlap in preparation, planning and pitfall avoidance between these companies and smaller ones.

Some commercial roasting companies may roast as much as 100 million pounds per year, according to Dan Ephraim, president of Modern Process Equipment (MPE), based in Chicago. This article is not targeted toward facilities that massive.

✦ PHASE 1 ✦ CREATE A MASTER VISION PLAN

According to Karl Schmidt, former president of Probat USA, the starting point "is not about your roasting machine; finding a roaster is the easy part." Many passionate and often highly experienced coffee roasters assume that choosing a roasting machine, which surely will hold the heart of your new or expanded operation, is the first and most essential task. I did. In retrospect, I see Schmidt is right when he recommends writing a master vision plan as the first crucial order of business.

This advice is echoed by Ephraim, who recommends clients start with a "5,000-foot view" of the overall project, allowing them to "develop an order of magnitude on the kind of space and resources necessary to move forward."

Michael Whitley, a consultant with Alliance Service Network and Spark Coffee Technologies who has helped many companies design and build roasting facilities, adds that "failure to invest the time needed for planning the entire project" is the most common mistake he sees companies making.

So, how does one write a master vision plan for a roasting plant?

Before you do anything else, heed the advice of Launtia Taylor, former vice president of marketing and communications for Probat USA, and prepare to "plan out for 10 years or more." A common pitfall companies make is investing substantial time and money in a new roasting plant only to realize within the first one to three years of operation—a shorter timeframe than the design and build-out process in some cases—that they already feel squeezed. Don't fall prey to such nearsighted vision.

After you get your long-term thinking lens on, identifying the "five Ws"—who, what, where, when and why—will offer a straightforward and useful approach to writing your master plan. As you'll see, many of your big decisions can be knocked off simply by taking the time to systematically address the five Ws.

Let's start with the "why." Why are you building a roasting plant? Consider your overall company vision and mission, and let them guide your vision for your roasting plant. Whatever vision you have for your company—market dominance, excellence, customer service, profitability or something else—"have a clear, practical ideal" (as Aristotle suggested) of how a roasting plant fits into that vision. Will it help you scale your business, give you ownership of your quality, bring prestige, or save you money? Potentially, it will do all of these.

CONTINUED ON PAGE 26 ▶

AFINIA LABEL® A Complete Line of In-House, On-Demand Color Label Printers & Finishers

NEW! Save Time & Money by Printing Your Coffee Labels In-house

Print high-resolution, full-color coffee labels quickly and inexpensively.

Powered by **memjet** and **HP Inkjet Technology**

L301 COLOR LABEL PRINTER | **L801** COLOR LABEL PRINTER

View Our Complete Line of Label Printing & Finishing Equipment
AfiniaLabel.com | AfiniaLabel.co.uk

Contact us:
sales@afinialabel.com
 +1.888.215.3966

TIME TO ORDER BIGGER BAGS!

Cold Pro™ Commercial Cold Brew System

Using 7 pounds of coffee per batch, the Brewista® Cold Pro™ brews 6 ½ gallons of concentrate; four gallons more than the competition!

Its patented lift and twist permanent filter design eliminates the mess and waste of traditional cold brew methods and makes consistently great tasting cold brew.

Visit mybrewista.com for more information.

Brewista®
 BREWING INNOVATION

contact: sales@mybrewista.com

NUOVA RICAMBI USA
THE PROFESSIONAL'S CHOICE

Barista Tool Headquarters

PARTS FOR ESPRESSO MACHINES | ESPRESSO GRINDERS & PARTS
BARISTA TOOLS & ACCESSORIES | CUSTOM MANUFACTURING

NuovaRicambi.com | sales@nuovaricambi.com 916.315.2535

BUILDING ✦ Part 1 of 2: Preparing to Work | CONTINUED

but it's important to identify the key reason you are building your plant so you can make sure everyone involved in the process is in alignment with this project vision. Clarifying your definitive endgame will help guide you through many decisions along the way.

For example, if your ultimate goal—your “why”—is to elevate quality, you might make a different decision about equipment than you would if your primary goal is to save money. While it seems obvious to use that lens when considering equipment choices, things muddy quickly in a project this big, and it's easy to compromise your ultimate vision for a secondary one or for in-the-moment concerns, like a relatively minor budget or time overage.



Remember to include space for a cupping lab and other quality assurance and research and development activities when planning your new facility. | Photo by Ramin Lee

Identifying the “who” is a good next step in developing your master plan. Who are your customers? Are you planning to serve your own retail customers, grocery store customers, offices or distributors? Are you a private-label roaster, roasting beans to your clients' specifications and product vision? Some companies serve a combination of these customers, while others focus exclusively on one type. Knowing your target customer(s) before designing your plant can help expedite decision making.

As an example, if you're roasting predominantly for your own retail customers and have a quality-driven vision, you might choose to purchase multiple smaller roasting machines to allow greater flexibility, smaller batch sizes and an artisanal approach to roasting. On the other hand, if you're roasting principally to supply grocery stores, a need for efficiency and absolute consistency may drive you to select a single larger machine. The style of roasting machine—i.e., drum, infrared, continuous, etc.—may be directed by similar considerations. (Note that part 2 of this series will address equipment selection criteria in detail; the above examples are merely meant to illustrate how considering your “who” might frame your early thinking.)

The “what” comes into play as you consider your final product. What will you produce in your roasting plant? Think beyond roasted beans to how you're going to package and distribute your coffee. See “Crafting a Product Plan” on page 30 for a list of product-defining questions, and incorporate

CONTINUED ON PAGE 28 ►

KEEP!

AROMA AND TASTE OF YOUR COFFEE

By providing the stock bags with good performance, best quality, design, and service, SOFTPACK Co., Ltd. has tried to put on for protecting and keeping the aroma of your coffee.



SOFTPACK®
Innovative Packaging Solution

Web site. www.bag4bean.com, www.softpack.co.kr Tel. +82-70-4348-5645 E-mail. soft@softpack.co.kr

TRUSTED.
INFORMATIVE.
ESSENTIAL.



DON'T MISS A
SINGLE ISSUE

*Subscribe
Today!*

roastmagazine.com

roast
MAGAZINE

your answers into your business plan. Each response will impact numerous choices throughout the design process.

The "where" question is considered by many as the most critical consideration. Where will you locate your roastery? As Schmidt says, the adage "location, location, location" that applies in retail is equally, though not as obviously, important in choosing the

location for your roasting plant. For a large-scale roasting plant, location isn't going to be motivated by heavy foot traffic (though it might be for smaller ones), but it should be inspired by careful consideration of the list that follows.

It's important to note that it can be difficult to pinpoint the ideal location before you complete the design of your facility. It's

possible that you won't be able to settle on a specific building until you're farther along in the design process. Keep in mind, however, that the right real estate can be difficult to find, depending on your general location, and the search can add many months to your timeline. At a minimum, home in on an area or areas that will work for you based on the following parameters, and start talking to a real estate partner early.

- Where is your ideal location? Consider distribution channels, current or future employees' commute time and safety, company history and community ties, etc.
- Can you roast coffee in this location? This question is particularly important, and sometimes overlooked. Before you sign a lease, make sure your operation can comply with city and state ordinances and you can meet air-quality permit standards, which might include restrictions on the proximity to schools and residences, or other regulations that could impact your ability to conduct business.
- Are the local planning and building departments easy to work with, or are they known for being difficult to navigate?
- How much square footage do you need? Review your product list and make an educated guess on a minimum amount of space you'll need, as well as a maximum amount you anticipate will be worth the cost. Don't forget to include space for a quality assurance lab, research and development, administrative operations, and other necessary and desirable functions.
- What is the traffic flow into and out of the facility, and can it accommodate your inbound and outbound shipments?
- How much onsite green bean storage do you need/want? How close are you to offsite green coffee storage? Think about the space you'll need for staging green beans, and whether you'll want to segregate your green coffee from other goods.
- Do you need a certain ceiling height? This is one of the criteria that can be difficult

to establish before you've designed your facility, but I recommend from experience that if you anticipate automated green and/or roasted handling systems, a ceiling height of 30 feet or more is not excessive, and may be necessary unless you can significantly increase your square footage or securely mount heavy equipment on the roof.

- Does the facility have adequate gas, electric and plumbing, and/or can you build time into your plan to have them installed? If utility upgrades will be needed, don't underestimate the time this can add to your schedule. Chris Miller, lead roaster at La Colombe Coffee Roasters in Philadelphia, experienced a delay of several months in his company's facility build-out while waiting for the utility company to upgrade gas into the building. At Philz Coffee, we added nearly six months for major electrical upgrades to our new roasting plant in Oakland, California.
- Is the facility capable of meeting food safety standards required under the Food Safety Modernization Act (FSMA)? These regulations require roasters to have a written food safety plan and a hazard analysis and critical control points (HACCP) plan, which involves establishing good manufacturing practices (GMPs). When it comes to selecting a location for your facility, that means making sure the building is solid and secure, there is no issue with standing water, adjacent sites are not rundown or insect- and/or rodent-infested, dock doors seal, there are proper bathrooms and hand-washing facilities, and more.

We're tackling the "when" question last because, frustratingly, it's the one over which you will have the least control. There isn't a pat answer to how long you can expect it to take to get from master plan to design to construction to installation to commissioning to operations. (By the way, that last sentence includes a preview of some of the steps we'll detail as we establish a timeline and project plan.)

What you can and should do, however, is establish a target operational start date, allowing decidedly more time than

you think you will need, then control what you can in the planning phase to keep the project on target for your timeline goal. Israelson, who was involved in relocating and expanding Kaldi's existing roasting plant, notes that his company's timeline was successfully established by starting with an end date in mind.

"We knew we wanted to move late spring

as our business slowed," he says, "so we picked a realistic date and worked backward from there. This approach worked really well for us."

Even for entirely new roasting operations, working backward from a target operational start date is recommended, though it is undoubtedly challenging and often frustrating

CONTINUED ON PAGE 30 ►

PEERLESS COFFEE & TEA.

Expanding small-batch craft coffees into America's Hospitality Industry

Fresh Sheet
SINGLE ORIGIN CAPPUCCINO
Ethiopian Mystic Lion
— Sigusse
100% honey • wild blueberry notes • sensory

POUR-OVER
Biodynamic Organic Mexico
— Finca Irlanda
cocoa • orange • citrus

Crafted by Adrian Sepulveda,
Peerless Account Executive

Get a fresh start | peerlesscoffee.com

It all comes down to one thing.

The perfect bean. From India.

Flawless European-style espresso and coffee begin with the well-balanced specialty bean that carries the Josuma Select trademark. These "direct trade" coffees are sourced from estates in India where they are grown, picked, and processed to meet Josuma's exacting standards.

The Result? Espresso and coffee as they were meant to taste.

CONTACT US:
(650) 366-5453 info@josuma.com www.josuma.com

20th Anniversary 1992-2012

- Malabar Gold®, Premium European Espresso Blend
- Monsooned Malabar-AA Super Grade
- Monsooned Robusta-AA
- Mysore Plantation-A
- Mysore Nuggets Extra Bold
- Premium Washed Robusta Kaapi Royale

JOSUMA
COFFEE COMPANY

CRAFTING a PRODUCT PLAN



Photo by Ramin Lee

Designing and building your new roasting plant will be more efficient if everyone involved is clear about exactly what you will produce in it. To establish that clarity, answer each of the questions below, then convert your answers into a concise statement to share with your design team and vendors along the way.

- ARE YOU SELLING single-origins, blends or both? If you are selling blends, are you blending before or after roasting?
- ARE YOU SELLING ground coffee, whole-bean or both?
- HOW MANY TOTAL SKUs will you produce? [Schmidt recommends taking this opportunity to consider the question, "Do we need so many?"]
- HOW MUCH OF EACH SKU do you expect you will need to produce daily, weekly, yearly? Remember, think 10 years out or more.
- WHAT SIZE PACKAGING will you be using—bulk (3 to 5 pounds), 12- or 16-ounce bags, fractional packaging, single-serve, canisters, other?
- WHAT SHELF LIFE do you need to achieve, and what packaging do you need to achieve it? Will you nitrogen flush? Remember to incorporate transit time from your plant to your customer in determining shelf life.
- DO YOU HAVE SPECIFIC DESIGN REQUIREMENTS for your packaging? While it may seem early to think about packaging design, visual and text design requirements can impact whether or not a particular packaging machine will work.
- WILL YOU FLAVOR coffee? If so, you'll need dedicated equipment and an isolated room with proper ventilation to keep flavor migration fully contained.
- WILL YOU cold brew?
- WHAT OTHER PRODUCTS will you produce and/or store in this facility?

because there are so many unknowns. It's nearly impossible to construct a realistic timeline before you secure your space, complete your facility design, and select and place purchase orders for major equipment. Those tasks are particularly influential on your timeline and, without them, in many ways you are simply throwing a dart. Nonetheless, in almost every business environment with budgets and ROIs

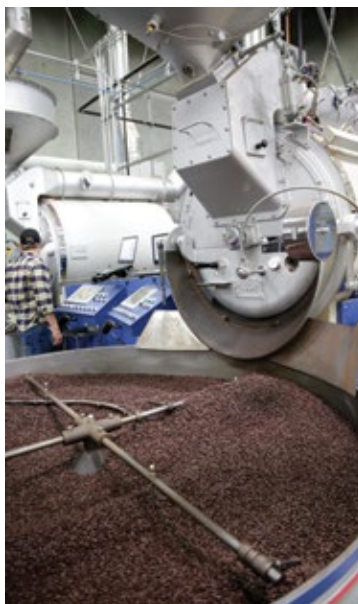


Photo by Ramin Lee

(return on investments) to meet, you'll have to throw the dart before you're ready. The best advice is simply to prepare to embrace mystery and endure ambiguity, as the when is difficult to pinpoint early on.

The good news is that if you take the time to craft a detailed project plan, breaking out the various phases of your project, you will be able to fine-tune realistic timelines for particular phases. From there, at some point, you'll hit the bullseye on a date for day one of operations.

✧ PHASE 2 ✧ PREPARING FOR THE WORK

Once you've envisioned your roasting plant, documented it in a master vision plan and secured alignment throughout your organization, you can dive in and design your plant, right?

Not quite yet. Take one more important "thinking before doing" pause to plan the all-important "how."

Planning how you will work and settling a few philosophical design questions is a critical, final pre-work phase. It's easy to get antsy for action and pull the trigger on a lease or long-lead-time equipment purchase orders, especially if you've spent significant time writing a master plan.

Darryl Blunk, president and CEO of Apffel's Fine Coffees in Santa Fe Springs, California, has counseled a number of other companies after the successful build-out of Apffel's 90,000-square-foot roasting plant in 2004. He and Taylor both note that the biggest mistake they see other companies make is not taking enough time at this stage of project planning. So, as frustrating as it may be, take the time to complete the following steps before you draw up your blueprints.

CONTINUED ON PAGE 32 ►





The Philz Coffee team at work. | Photo by Ramin Lee

STEP 1 | DETERMINE YOUR DESIGN APPROACH

There are two overarching ways to approach facility design. One option is to work with a single engineering/equipment vendor to design all of your roasting and handling systems. Alternatively, you may want to take a more piecemeal approach and choose different vendors for different areas—one for roasting equipment, one for handling system, another for packaging equipment, and so on.

There are pros and cons to each approach and no definitive answer on which is more expensive in the end. In short, a total package design is generally more efficient during the design phase, with fewer options and fewer vendor decisions to make. Furthermore, one firm is responsible for ensuring that all the systems work together, which can save you headaches during the commissioning and startup phases.

On the other hand, the piecemeal approach allows for more flexibility in your design, more opportunities for cost savings, and more project partners with deeper layers of experience in their particular areas. If your business is unique, you may find you need to work with different vendors to achieve the design that fits your business and operations model. There isn't a right or wrong design approach; you just need to make a choice based on your company's needs and prepare yourself to live with the consequences.



Include members of your production team in the design process to optimize equipment selection, layout and workflow. | Photo by Ramin Lee

STEP 2 | PICK YOUR PERFECT PEOPLE

Regardless of your design approach, you need great people on the project, ideally a mix of internal and external experts. Internally, your team should involve appropriate leadership for vision focus and higher-level budget oversight, an experienced project planner, a coffee product expert and, perhaps most importantly, representation from the production line, if in place.

"Use your production team," Israelson advises. "Ask for their input for layout and process planning in regard to their specific department or process."

Often, the employees doing the work and using the equipment offer the best ideas for designing workflow, which in turn directs the best facility layout and equipment choices.

While it's ideal to incorporate and capitalize on employee knowledge, it's also highly advisable to reach outside your company

CONTINUED ON PAGE 34 ►

Gentle Clean Reliable Conveying

Decades of Global Experience
World-Wide Experts in Cable Conveying Solutions

45 Years in Business | **65** Countries Served | **900** Products Moved | **30,000** Installations

Leader in Tubular Drag Conveying
40 Years of Cable and Disc Technology Conveying Experience
Over 30,000 Conveyors Installed
Continuous State-of-the-Art Research and Development
More Than 65 Countries Served

(641) 673-8451
www.cablevey.com

CABLEVEY CONVEYORS
The Gentle Way to Convey

Two facilities producing great tasting decaf

DESCAMEX The coffee of your dreams

MC OFFEE Full flavor experience

And our brand new image

DESCAMEX
"Enjoy coffee...without limits"

► www.descamex.com
► exports@descamex.com.mx
► USA & Canada toll free 1 844 472-8429
► Tel: +52 (271) 716-3123

JAVAJACKET

www.javajacket.com | 1-800-208-4128 | info@javajacket.com

Earth Friendly ♻️

Satisfaction Guaranteed ★

Two Different Sizes ☞

Custom Printing ☞

Same Day Shipping ➡️

THE BEST INSULATING, GREEN COFFEE SLEEVE ON THE PLANET!



TOP La Colombe owners Todd Carmichael (left) and Jean-Philippe Iberti examine the cooling tray for the company's new roaster. **BOTTOM LEFT** La Colombe's new roaster, during installation. **BOTTOM RIGHT** Parts of La Colombe's new roaster, waiting to be assembled. | Photos courtesy of La Colombe Coffee Roasters

for free and paid guidance in areas where your staff might lack experience. Unless you have already built a roasting facility, there is a high probability you do not have all of the expertise you need to most efficiently manage the project.

Don't be afraid to reach out to industry friends and acquaintances and potential vendors and ask for their opinions and advice. Leverage your industry connections and professional network to visit other plants, both coffee and non-coffee focused, to learn from others' mistakes and avoid pitfalls. While working on the design for Philz Coffee's 50,000-square-foot roasting plant, I relied extensively on the generous time of many industry friends and potential vendors, the latter willing to invest free time in the hope of becoming a partner. Every bit of information I received was useful.

That said, don't limit yourself to free advice. Consider investing in an experienced consultant or consulting team to help you navigate design decisions, assist in project and timeline management, and potentially even engage in discussions with architects, engineers, contractors and city planning officials. In addition to providing needed expertise that will save you time and money, external consultants can help manage the load. The sheer volume of tasks involved in a project of this scope—from the large to the minute—can be overwhelming, particularly if your internal team continues to manage its daily activities. Whitley frequently has seen the "underestimation of time required to manage a project of this scale lead to decision fatigue," he says, resulting in project delays as daily responsibilities and project-based accountabilities compete.

STEP 3 | CHOOSE AND USE SYSTEMS TOOLS

Don't underestimate the need for project-planning and other system tools. This is a massive project with many components. Ideally, use cloud-based project-planning tools such as Wrike, Asana or Trello to manage communications, timelines and budget conversations. With many different components and players still to enter the game, emails quickly become overwhelming and conversations disjointed. At a minimum, as Whitley recommends, establish a collaborative platform such as Dropbox or Google Drive to facilitate participation.

Ephraim also suggests having the latest design resources available, such as 3D modeling, to "eliminate issues down the installation road." He adds that someone on your team needs extensive experience with the software to make the best use of these tools.

STEP 4 | CLARIFY YOUR DESIRED LEVEL OF AUTOMATION

Are you striving for highly automated, semi-automated, or mostly manual operations? This question may have been addressed in your vision plan as you answered the "what" product questions or the "why" motivation questions, but sometimes it isn't clear. Your design team can move much more quickly through its work if all participants fully understand the company's general operational philosophy.

CONTINUED ON PAGE 36 ►



“ My customer needed more coffee at the last minute — a lot more coffee — and I didn't have enough to cover their order. I called Olam Coffee and they made things happen for me in a way that showed they knew our company and our needs at a deep level. Olam saved the day.”

Nathanael May, Director of Coffee at Portland Roasting Coffee



We connect roasters to the finest specialty green coffees
 East Coast 914.920.2710 West Coast 707.431.9500 OlamSpecialtyCoffee.com



Consider all the activities your staff will perform when estimating space needs and designing your new plant. | Photo by Ramin Lee

STEP 5 | GO!

Stay tuned for the second installment in this two-part series, which will appear in *Roast's* March/April 2017 issue. Having covered the critical pre-work, visioning, and gathering the right team and tools in this installment, part 2 will move into action as we address budgeting, facility design, equipment and vendor selection, site preparation, installation, commissioning and startup.

ANDI TRINDLE MERSCH *has a varied background within her specialty coffee career, which began behind the espresso bar in 1989 and, since then, includes cupping, training, consulting, green coffee trading and buying, quality control, sales and writing. Mersch currently serves as director of coffee at Philz Coffee. She was elected to the Roasters Guild Executive Council for a two-year term in March 2015, and she volunteers with the Specialty Coffee Association of America (SCAA) developing coffee business curriculum. She is a past board member of the SCAA and the International Women's Coffee Alliance.*

COLD BREW

We have made an *enhancement* to your favorite Ditting grinder to grind from a particle size of 100 microns to 1180 microns - from Turkish to Cold Brew and everything else in between - all with one grinder!

COLD BREW



COLD BREW

Model KR1203
CB
110v

Model KR1403
CB
220v/3ph

This 2015 model is available only from Ditting USA, Inc.

ditting[®]
USA, Inc.

810-367-7125
8801-B Smiths Creek Rd
Wales, MI 48027 USA
www.ditting.com



WE WILL NEVER LET COFFEE DOWN

Swiss Water® Process begins with pure water and ends with coffee so amazing you don't miss the caffeine.



® are trademarks of Swiss Water Decaffeinated Coffee Company, Inc.

BUILDING *a MID- to LARGE-SCALE* SPECIALTY COFFEE ROASTING PLANT

A Practical Approach to an Epic Challenge



The final phases of the buildout process involve site preparation; delivery, installation and commissioning of equipment; startup operations; and employee training.

PART 2 OF 2 ✦ GETTING *to* WORK

By Andi Trindle Mersch | Photos by Ramind Lee

IN THE FIRST PART of this two-part series—published in *Roast's* January/February 2017 issue—we prepared for the practical work of designing and building a mid- to large-scale specialty coffee roasting plant. We discussed creating a master vision plan, forming a dream team, establishing an approach for the team's work, and clarifying critical operational and design philosophies needed to guide design decisions.

In this second and final installment, we'll tackle

budgeting and completing our pre-work phase, then move into the practical work of facility design, equipment and vendor selection, site preparation, and management of the buildout process and startup operations. During these later phases, it's especially critical to revisit your master vision plan regularly to ensure your choices support your specialty coffee quality standards.

CONTINUED ON PAGE 24 ►

PHASE 2 PREPARING FOR THE WORK

(This phase began in part 1 and continues here.)

✦ STEP 6 | BUDGETING

Establishing a budget is one of the trickiest parts of building a roasting plant. Because there are so many significant variables—from location and company vision to preferred level of automation, product line needs, equipment preferences, food safety, quality control and more—there is no universal budget range for roasting plants based on square footage or pounds roasted annually. Nonetheless, Karl Schmidt, former president of a large roaster manufacturer who has participated in hundreds of buildouts during his career, emphasizes that companies should plan for an average payback of seven years or more. Schmidt has seen many coffee professionals plan based on the 1.5- to two-year average return on investment (ROI) for a retail coffee store, and many either underbuilt for their actual needs or went significantly over budget.



Keeping a seven-year ROI and your vision firmly in mind, take sufficient time to review or create a detailed budget. Knowing you undoubtedly will make changes and mistakes should not prevent you from working diligently on your budget upfront and throughout the project. See “Suggested Broad Budget Categories” on page 30 for recommended categories, and keep the tips that follow in mind as you begin preparing your budget:

- Discuss budgeting philosophy with your financial leadership team. For example, do they prefer early ballpark guesses and rough estimates to provide a sense of scope, or do they prefer to wait for well-vetted estimates and actual quotes? Both philosophies are viable, and adjustments will occur along the way with either approach, but alignment will alleviate stress on both sides.
- Don't forget to consider tax implications for capital expenditures and other regulatory expenses. If you don't have in-house expertise, consider hiring a financial consultant.
- Leave room for the unexpected by designating a line item for “contingencies”; general contractors commonly use a range of 5 to 10 percent of the total budget.
- Visit comparable facilities, including a variety of facility designs and price ranges.

PHASE 3 DESIGNING YOUR ROASTING PLANT

✦ STEP 1 | PROCESS FLOWCHART AND LAYOUT

A process flowchart illustrates the processes your product goes through. Your layout shows where each process occurs physically in your facility. By taking the time to break down each process into functional steps, you can set equipment parameters and physical space needs or constraints. Start with how green coffee enters your facility. Consider where it is stored before roasting, how it gets into and out of the roaster, where it goes after roasting, and how it gets to blending or flavoring (if any), grinding (if any), packaging, and ultimately out the door. Use your pre-work decisions related to level of automation and capacity requirements as a guide.

Many low- to moderately priced cloud-based software options, such as SmartDraw and AutoCad, can help. Your vendors also might provide layout design service as part of an engineering package. Keep in mind that you likely will want to play around with ideas, so having some ability to expeditiously manipulate drawings in-house is helpful.

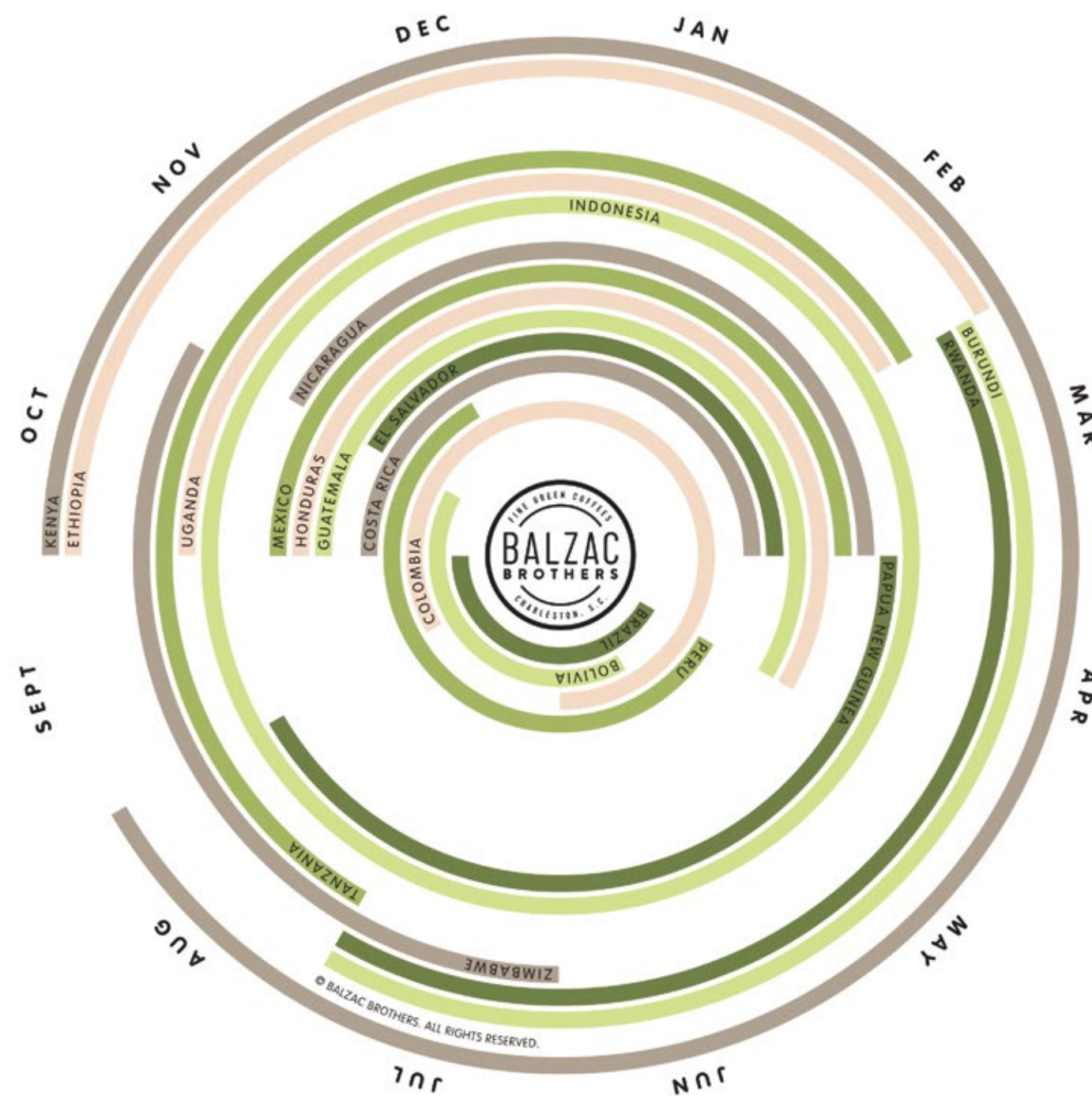
Ideally, for operational efficiency, your product will flow through your plant from green bean to packaged product in a straight line or circular route. Not all facilities allow for this trajectory, however. In some cases, you may have multiple floors to work with or structural elements to work around.

Additionally, utility sources, ceiling height and other constraints may impact how your product can flow through your plant. Now is the time to decide whether you will invest in facility upgrades—such as adding or removing internal walls, or expanding or moving existing electric, gas or water lines—or whether you will work within the constraints of the existing space. Your budget, level of automation, landlord and/or local building regulations will impact this decision.

Remember also to designate space for quality assurance (QA) functions such as sample roasting, research and development, package efficacy testing, and other tasks essential to achieving your specialty coffee standards. Consider how these activities will fit into the flow of your design. For example, do you want your cupping lab accessible to guests, or limited to in-house use? Do you want your roast color analyzer in the lab, or next to your roasters for instant testing? Do any areas need climate control?

During this phase, you should employ the services of an architect and engineers to direct, if not complete, your design. You likely will need their stamped drawings for permit approvals, but more importantly, you'll need their expertise in making decisions related to access, airflow, fire safety, earthquake anchoring, air quality permitting, utility capacity, good manufacturing practices (GMPs) and so on.

CONTINUED ON PAGE 26 ►



HARVEST WHEEL



REFINING OUR TASTE SINCE 1917.
BALZACBROTHERS.COM | 843-723-8020

GREEN COFFEE IMPORTERS

Local and federal food and worker safety requirements also should be a priority. A roastery is considered a food manufacturing facility and therefore must comply with a number of specific requirements under the Food Safety Modernization Act (FSMA). It's a good idea to consult a food safety specialist to ensure your new facility is in compliance as the regulations are constantly evolving.

In addition to harnessing the knowledge of outside experts, this is a critical time for input from your own team.

"Get feedback and buy-in from the operators that perform the day-to-day work," says Darryl Blunk, president and CEO of Apffel's Fine Coffees in Santa Fe Springs, California. "They know the system and what is needed."

❖ STEP 2 EQUIPMENT SELECTION

Once you have a process flowchart and layout, identify the equipment needed to accomplish each process. Here's where you'll be glad you completed a master vision plan and preliminary budget. If you haven't recently done so, take the time to review both—particularly the quality standards you set in your vision plan—and use that information as a guide throughout the equipment selection phase.

Begin by listing the major equipment required for all the processes and activities your team will perform in your new plant. While your specific budget, location, building, product line and other factors will dictate the equipment you ultimately purchase, it's important to consider the broad questions that follow, along with the vendor criteria questions on pages 32 and 34 before making your final decisions.

As you go through the questions that follow, again keep your master vision plan in mind, and make decisions that comply with your goals. Generally, though not strictly, specialty coffee standards will require a higher capital investment for equipment than conventional coffee.

PROCESS 1 | GREEN BEAN HANDLING

EQUIPMENT/ACTIVITY 1A Green Bean Storage

- Will you have storage silos for green beans, or go straight from bags/sacks to your roaster(s)?
- If you use silos:
 - What capacity per silo do you need?
 - How many silos do you need?
 - Will you rotate origins and/or keep blended green coffee in your silos, or do you need designated silos for each origin?
- How do you efficiently and thoroughly clear silos between lot changes?
- Will you need to pull coffee from multiple silos for pre-roast blending?

EQUIPMENT/ACTIVITY 1B Green Bean Loading Station

- How and where will you load your green beans? Options include floor grate, elevated manual dump station, and elevated platform.
- Will you load single jute bags, pallet loads, super sacks, or a combination?
- Do you need visual and physical access to your green beans during loading? Be sure to consider protection against foreign matter that can make its way into green beans—even those of top quality.

EQUIPMENT/ACTIVITY 1C Green Bean Cleaner

Seriously consider an industrial green bean cleaner to remove foreign material that inevitably makes its way into even the highest quality coffees. At minimum, you'll want magnets installed within your loading station hopper(s) in addition to a post-roast destoner.

EQUIPMENT/ACTIVITY 1D Dust Collector

Green beans create a lot of dust. Do you need a dust collector to meet worker or environmental safety standards? Will you need an intermittent or heavy duty continuous system? In addition to Occupational Safety and Health Administration (OSHA) regulations and local air quality requirements, think about machine size and noise before deciding.

EQUIPMENT/ACTIVITY 1E Green Bean Conveyance

What kind of conveyance line will you use to move your green beans from the dump station or silos into the roaster? Options include pneumatic, mechanical, and bucket elevator, with varying costs and benefits. Mechanical systems can be gentler on beans, maximizing QA goals, but they are also more expensive than pneumatic conveyance, which may be sufficiently gentle for green beans. From food safety and QA standpoints, closed systems are recommended.

PROCESS 2 | ROASTING

EQUIPMENT/ACTIVITY 2A Roasting Machines

This is often perceived as the most significant decision, as your roasting machine(s) is/are the heart of your roasting

plant. There are many parameters and factors at play here, and hopefully your vision plan helped prepare you for this decision. This single decision could be (and has been) the basis for an entire article, but for the purposes of this series, here are a few of the many critical factors to consider:

CONTINUED ON PAGE 28 ►



DISCOVER WHY THE WORLD'S BEST ROAST MASTERS ARE CHOOSING LORING™ ROASTERS.

- » Reduce fuel costs by up to 80% compared to conventional roasters
- » Achieve true consistency with agile digital controls and repeatable roast profiles
- » Conserve space with the smallest footprint in the industry



NEW! Destoners
loring.com/destoners

LORING.COM

It all comes down to one thing.



The perfect bean. From India.

Flawless European-style espresso and coffee begin with the well-balanced specialty bean that carries the Josuma Select trademark. These "direct trade" coffees are sourced from estates in India where they are grown, picked, and processed to meet Josuma's exacting standards.

The Result? Espresso and coffee as they were meant to taste.

CONTACT US:
(650) 366-5453 info@josuma.com www.josuma.com



Malabar Gold®, Premium European Espresso Blend

Monsooned Malabar-AA Super Grade

Monsooned Robusta-AA

Mysore Plantation-A

Mysore Nuggets Extra Bold

Premium Washed Robusta Kaapi Royale

JOSUMA
COFFEE COMPANY



- What style roasting do you prefer: drum, continuous?
- What type of burner: gas power, atmospheric, recirculating, infrared?
- Do you want smaller or larger batch sizes?
- Do you want automated, semi-automated, or manual controls?
- Do your local air quality management agency requirements direct or even dictate your choice?

EQUIPMENT/ACTIVITY 2B | Afterburner

- What air quality requirements exist in your area, and what non-required air quality standards do you want to meet for your own environmental values?

EQUIPMENT/ACTIVITY 2C | Destoner

- Does your roasting machine manufacturer include a destoner, or do you need to purchase one separately? This is a must-have piece of equipment for specialty coffee roasters and, under FSMA regulations, for anyone roasting at the volumes discussed in this article.



Don't forget to include employee training in your budget, as your team might need instruction on using new equipment. Forklift operators will need additional training and certification.

PROCESS 3 | ROASTED BEAN HANDLING

EQUIPMENT/ACTIVITY 3A | Roasted Bean Conveyance

- How does coffee get from the cooling tray to the next phase of processing? Will you drop into mobile bins and deliver manually or use a conveyance line? If you use a conveyance line, remember that food safety requirements (and your QA team) prefer closed systems, and roasted coffee is more prone to breakage than green coffee. In light of this, mechanical conveyance, while more expensive than pneumatic or bucket systems, is likely worth the expense for roasted coffee in a specialty operation.

EQUIPMENT/ACTIVITY 3B | Roasted Bean Storage

- Do you need to store roasted coffee briefly before the next processing phase? If so, look for systems and solutions that minimize holding time and protect from air exposure. Make sure you have clearly articulated freshness standards, and determine how you will achieve them. Some variables to consider include containers (mobile bins, stationary silos, or both); capacity per unit; total quantity; transport into and out of bins/silos; and cleaning.

PROCESS 4 | POST-ROAST OPERATIONS

EQUIPMENT/ACTIVITY 4A | Blending

- If you blend any coffee after roasting, what size and scale of blending equipment do you need to keep your beans as fresh as possible? An undersized blender will mean roasted coffee has to sit in silos or bins, which could compromise freshness.

EQUIPMENT/ACTIVITY 4B | Grinding

We all know specialty coffee standards dictate grinding immediately—within no more than 15 minutes, and ideally within seconds—before brewing, but sometimes customers or distribution channels require us to sell ground coffee. If this is the case for your company, research grinders carefully to determine which type (conical, flat or rollers) will best balance your quality, speed and budget requirements. Consistent particle size and cool output (i.e., no hot grounds) should be the priority.

CONTINUED ON PAGE 30 ►

ACADEMY OF COFFEE EXCELLENCE

Upcoming SCA Pathways & Courses

BREWER | BARISTA | ROASTER | BUYER | TASTER

www.AcademyOfCoffee.com

ORGANIC PRODUCTS TRADING CO.
Green Specialty Coffee Importer

CULTIVATING STRONG relationships | SOURCING QUALITY coffee

Visit us in Nashville! Booth 600-606
Visit us in Seattle! Booth 732-736

Specialty Coffee Association

Founders, Developers & Importers of Café Femenino Coffee®

1.888.881.4433
www.optco.com

Café Femenino Peru

SUGGESTED BROAD BUDGET CATEGORIES



The Philz Coffee roasting facility nears the end of its buildout.

- Building and site preparation
- Lease or mortgage
- Utility upgrades to the building and within the building
- General construction work, including drywall, anchoring, painting, etc.
- Architect and engineer design fees
- Permits
- Air quality
- Building, plus gas, electric, plumbing and construction
- Equipment selection and procurement
- Equipment cost
- Taxes
- Shipping
- Equipment installation and commissioning
- Labor
- Additional required construction, equipment rental, parts and tools
- Vendor time and travel
- Consultants (optional)
- Operator training and certification
- The unexpected/contingencies
- Ongoing periodic equipment repair and maintenance

This information was provided by Michael Whitley, a consultant with Alliance Service Network and Spark Technologies.

PROCESS 5 | PACKAGING

EQUIPMENT/ACTIVITY 5A | Packaging

With your freshness standards, customer requirements and capacity needs as a guide, consider the following questions:

- What packaging types and sizes do your product lines and freshness standards dictate?
- How will you weigh product? Auger systems often used for ground coffee are more cost-effective than load cells (scales), but less accurate. Ideally, you are grinding minimally, if at all, so consider designing and budgeting your system for best accuracy.
- Do you want form-fill foil packaging, pre-formed bags, or both?
- Will you nitrogen flush?
- Will you vacuum pack?
- Will you heat seal?

PROCESS 6 | STORAGE

EQUIPMENT/ACTIVITY 6A | Warehouse Racking

- How much packaging and shipping material will you store on-site?
- How much packaged product will you store on-site?
- Do you need city permitting?
- Keep access lanes and height constraints in mind.

PROCESS 7 | MISCELLANEOUS

EQUIPMENT/ACTIVITY 7A | Forklift

● You will need a forklift for inbound green beans and likely for outbound shipments as well. Identify the capacity and any special features, and make sure the forklift you select can maneuver around your other equipment and move 20-bag coffee boards (versus 10-bag, four-way pallets), which you likely will use in a larger plant. Keep in mind that electric/battery forklifts are more environmentally friendly than propane or diesel, but they also may not work in high-usage environments. In either case, forklift certification is required for any driver.

EQUIPMENT/ACTIVITY 7B | Other

- Will you regularly need a scissor lift, boom lift, pneumatic lift, or other equipment to load or access equipment?

CREATING YOUR EQUIPMENT SHOPPING LIST

For efficient side-by-side comparison, list all necessary equipment in a spreadsheet or similar format. Do not include equipment that is

CONTINUED ON PAGE 32 ►

WE ARE
HERE TO
HELP YOU
GROW



FROM LEFT

- Maciej Kasperowicz Director of Coffee, Gregorys Coffee
- Bailey Rayne Arnold Director of Education, Gregorys Coffee
- Gregory Zamfotis Owner / CEO, Gregorys Coffee
- Todd Mackey Trader, Olam Coffee



We connect roasters to the finest specialty green coffees East Coast 914.920.2710 West Coast 707.431.9500 OlamSpecialtyCoffee.com

Signa-Air Airpot

Are your airpots NSF? Ours are.

Offered with both stainless and glass lined insulation, the Signa-Air Lever Lid Airpot features an easy-to-use lever lid, designed with convenient snap-on flavor indicators to hang under the pour spout. Keep track of them with the snap-on storage area found on the back of the collar.

NSF



1.800.328.4493
www.serviceideas.com



Creating process flowcharts will help you design a plant that will maximize efficiency between operational areas.

out of your budget or project scope. Note which items you must have versus equipment you would like to have; this distinction will be helpful if you encounter budget or space constraints.

Next, identify possible vendors and equipment models for each item. And finally, for each vendor/model, make notes about the criteria that follow. (Your criteria list will be shorter if you are working with one engineering vendor for your total facility design versus multiple independent equipment vendors.)

- **Vendor Reputation:** What is the vendor's reputation for quality of product and service? Consider the vendor's reputation from design through startup, as well as in the weeks, months and years after the project is complete.
- **Cost:** How does the pricing stand up to competitors and your budget?
- **Capacity:** How much product do you need to produce daily? Weekly? Annually? For how many years do you expect this equipment to meet your needs?
- **Capabilities:** What specific features are essential, preferable, and unnecessary for each piece of equipment? How do capacity requirements come into play?
- **Footprint:** How much space do you have available for this equipment? Do you have appropriate ceiling height?
- **Utilities:** What are the electrical, gas, water and air requirements? Do you have adequate utilities and/or can you make them available?
- **Warranty and Maintenance:** What kind of warranty and post-installation service is provided? How often does this equipment require repair? How much maintenance is required on a daily, weekly and annual basis? How available and expensive are parts for repair and maintenance?

CONTINUED ON PAGE 34 ►



Official Green Coffee Sponsor
US Roaster Championship

Official Origin Trip Sponsor
US Barista Championship
US Brewer Cup
US Roaster Championship
US Cup Tasters Championship
World Cup Tasters Championship
World Brewers Cup
World Barista Championship



Come visit us at

SCA

Booth
#2243

Seattle, WA
April 20-23
2017
Washington
State
Convention
Center

Two facilities producing great tasting decaf



The coffee of your dreams



Full flavor experience

And our brand new image



www.descamex.com
 exports@descamex.com.mx
 USA & Canada toll free 1 844 472-8429
 Tel: +52 (271) 716-3123

DESCAMEX
 "Enjoy coffee...without limits"

BUILDING ✦ Part 2 of 2: Getting to Work | CONTINUED

- **Safety:** Is this equipment designed to meet both food and worker safety requirements? Don't forget ergonomics and general comfort for your team.
- **Environmental Considerations:** How energy-efficient or otherwise eco-friendly is this choice?

After you review these criteria and reach your conclusions, particularly if you are working without an external project consultant, revisit your network of industry professionals for additional feedback. Consider whether each piece of equipment or vendor will work well with your other selections. Does the best-in-class choice fit into your overall facility concept? In some cases, your second choice may rank higher from a 5,000-foot view.



The Philz Coffee roastery after its buildout project is complete.

PHASE 4 THE BUILDOUT

If it seems like we've been working on this project forever without noticeable progress, that's about right. And, yes, it is likely maddening by this point. We are finally, however, at the buildout phase where we can start to produce—though likely somewhat painfully—tangible results.

✦ STEP 1 | SITE PREPARATION

Site preparation includes all the exterior and interior site work required to ready your facility for receipt, installation and operation of equipment. Examples of exterior work include managing water runoff and upgrading roads, parking lots and utilities from the street. Examples of interior work include major and minor construction, utility work, meeting restroom and disability requirements, anchoring

CONTINUED ON PAGE 36 ►

PLI-VALV[®]
PACKAGE DEGASSING SYSTEMS

PV-25-FV

The only pressure sensitive one-way degassing valve with integrated filter

Complete degassing system solutions

- One-way degassing valves for a range of packaging sizes and types
- High speed valve applicator systems
- Testing and quality assurance systems
- System design, installation, service, and support



For over 20 years, our one-way degassing valves have enabled coffee roasters to eliminate bulk degassing from their operation and preserve the freshness and quality of their coffee. With billions used world-wide, our valve technology is proven to allow freshly roasted coffee to naturally degass inside of hermetically sealed packaging while providing an effective barrier to environmental oxygen, moisture, and contaminants.

PLITEK[®]
 www.plitek.com
 1-800-966-1250

Gentle Clean Reliable Conveying



Decades of Global Experience

World-Wide Experts in Cable Conveying Solutions

45 Years in Business | **65** Countries Served | **900** Products Moved | **30,000** Installations

- Gentle Handling – Less Product Loss - Less Scrap!
- Dust-Free Enclosed System • Conveys Materials on Multiple Planes
- Low Maintenance • Energy-efficient • Clean-In-Place Options
- Low Decibels – Quiet! • Minimal Footprint
- Starts & Stops Under Load

(641) 673-8451
 www.cablevey.com



Cablevey is a registered trademark of Ingersoll Rand, Inc. 02/17

COLD BREW

We have made an *enhancement* to your favorite Ditting grinder to grind from a particle size of 100 microns to 1180 microns - from Turkish to Cold Brew and everything else in between - all with one grinder!

COLD BREW



Model KR1203
CB
110v

Model KR1403
CB
220v/3ph

COLD BREW

This 2015 model is available only from Ditting USA, Inc.

ditting
USA, Inc.

810-367-7125
8801-B Smiths Creek Rd
Wales, MI 48027 USA
www.ditting.com

and painting. Don't forget telephones, Internet and electrical needs for work stations, and employee kitchen, break rooms, lockers and a first-aid station. Depending on the state of your facility, local and state ordinances, and your final design choices, this work can be minor or major in scope and can take many weeks to more than a year. A complete new buildout will most often take more time and money than altering an existing space, but not always.



Ceiling height is just one of the factors that will impact your equipment purchasing decisions.

Regardless of the scope of the work, as soon as you have your layout and equipment—ideally, even as you are making final decisions about equipment purchases and layout—begin coordinating site preparation. If you are leasing your space, work with your landlord to ensure approval, and possibly even financial support, for any work you perform.

This is the phase where many delays occur, and surprises are inevitable. Even if you are expanding operations in a building you know—but especially in a building that's new to you—expect to uncover unforeseen needs or constraints. For example, at Philz Coffee we discovered our large, seemingly ample main electrical switchboard was not connected to power from the street. This caused a nearly nine-month delay as we worked with the local utility provider and our landlord to upgrade the building's electrical capacity.

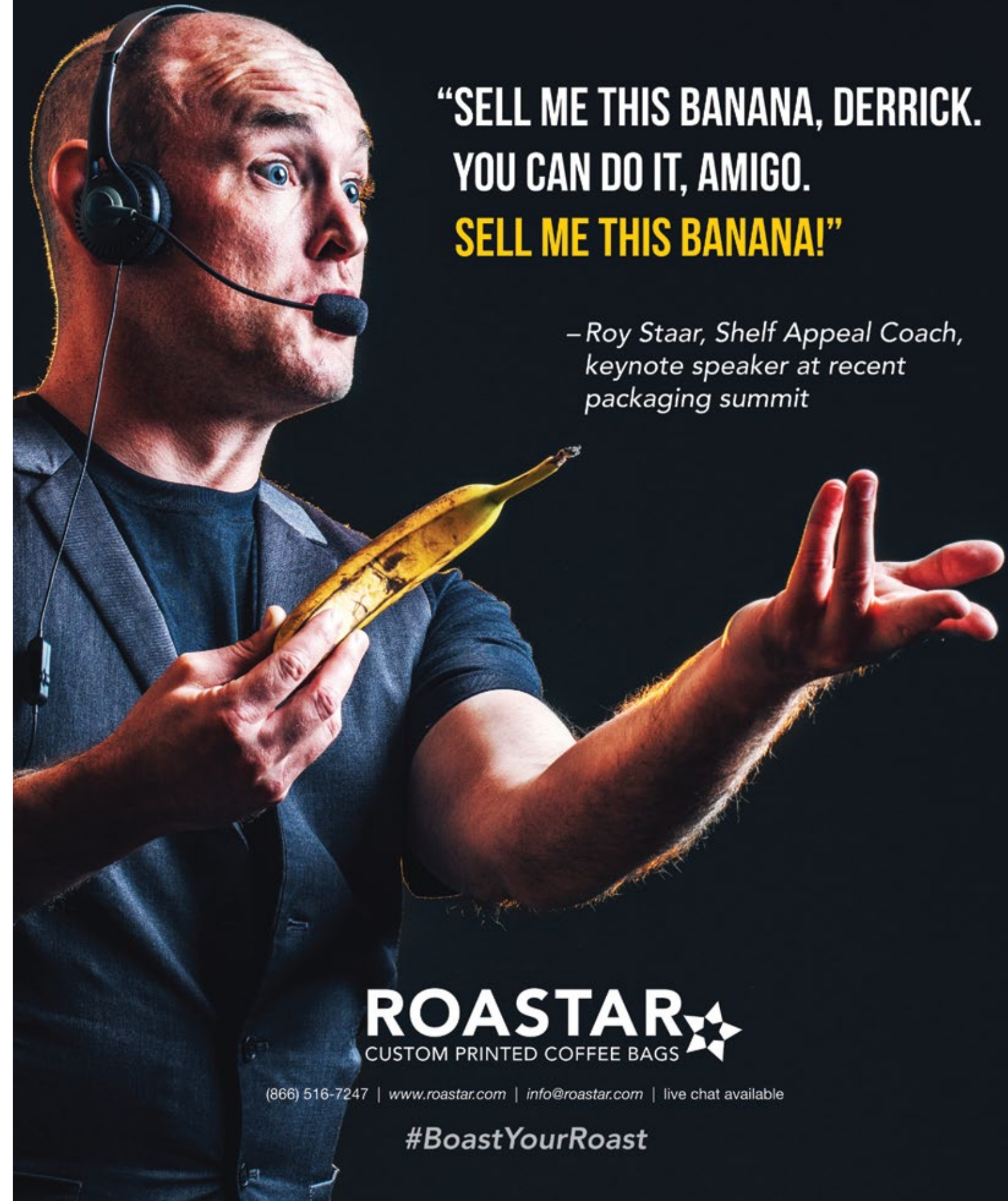
Additionally, you'll find that even the work you expect to undertake—upgrading utility meters, additional roof penetrations for ducting, drywall work, plumbing and so on—often takes significantly longer than expected.

As Brett Israelson of Kaldi's Coffee Roasting Company in St. Louis says, "Contractors are notorious for overpromising and under-delivering."

To mitigate contractor issues during site preparation, delivery and installation, many experts recommend working with a general contractor and implementing financial penalties for delays. However, if your budget cannot support the cost of a general contractor—they generally charge up to 20 percent of the total project cost—or you have strong project management experience in-house, you may opt to work without one.

Either way, don't underestimate the time that will be required from your project team from this point on. At minimum, with a highly skilled and reliable general contractor on board, you'll need to dedicate time weekly for project plan hiccup and timeline reviews. More likely, as Israelson experienced, you'll need someone on your team to

CONTINUED ON PAGE 38 ►



ROASTAR
CUSTOM PRINTED COFFEE BAGS

(866) 516-7247 | www.roastar.com | info@roastar.com | live chat available

#BoastYourRoast



See pages 26 and 27 for details on designing green bean storage and conveyance systems.

meet with contractors on a daily basis as adjustments, concessions and omissions become necessary to keep the project moving forward.

✦ STEP 2 | DELIVERY

Well before your site work is complete, start managing delivery timelines and details, and schedule installation work with your vendors. When scheduling deliveries, consider the equipment needed for unloading trucks, available delivery hours, and additional people required for unpacking crates.

Decide beforehand where you want equipment placed. Will it go to its ultimate home on the plant floor or to a designated storage area on- or off-site before installation? Make sure you designate someone to scrutinize packing lists to confirm all parts are received. Take pictures, particularly if you notice any damage. Wherever you place the equipment prior to installation, make sure it is protected from the elements and people.

✦ STEP 3A | INSTALLATION

Planning and managing installation and commissioning can be frustrating. Delivery problems can include late delivery; broken, damaged or missing part delivery; and delays or problems with site preparation work. Additionally, managing schedules is highly complex, especially with multiple vendors and contractors. Equipment manufacturers sometimes require that they install their equipment at your facility as a contingency for warranty coverage, but you'll likely need a mechanical contractor, too. Mechanical contractors move and place large equipment and piping, can build needed support and access platforms, and generally ensure all the nuts and bolts of your large equipment are in the proper place and to code. You'll also need electricians, plumbers and other contractors for final hookups in preparation for commissioning.

✦ STEP 3B | COMMISSIONING

Commissioning often aligns with installation, but it is helpful to view it as a separate step. Again, scheduling is complex. During

commissioning, equipment manufacturers or their representatives are on-site to manage initial testing, program controls, work with contractors to solve connection issues, and prepare your team for live operations. It's critical that necessary site prep work and installation is complete before the commissioning crew arrives. You can best prepare for commissioning by asking your manufacturers for a checklist of everything they need in place for successful startup. Share this list with all relevant contractors and arrange for them to be on-site during commissioning for any adjustments or fixes required.

✦ STEP 4 | STARTUP AND TRAINING

When the switches turn on and you go live, you've reached startup. Congratulations! Take advantage of your vendors' expertise during this process. Commissioning ensures that your equipment works in general, but it doesn't guarantee it works well within your total operation, or that your team understands how to use it. Consider keeping vendor representatives on-site for a few days and paying for live training with your team.

PHASE 5 POST-STARTUP OPERATIONS

If it feels like you've taken a long journey by reading this two-part series, that's because the journey to build a mid- to large-scale roasting plant is a long and nuanced one. Hopefully, this series has helped prepare you practically and emotionally to complete what may be the biggest project of your career.

As a parting piece of advice, keep in mind that reaching startup doesn't mean you're finished.

"Once you move into your new facility, budget for time and resources to learn the new environment," says Blunk. "It took us almost a year once we moved in to understand the new systems and how we all needed to work together in the new environment."

ANDI TRINDLE MERSCH has a varied background within her specialty coffee career, which began behind the espresso bar in 1989 and, since then, includes cupping, training, consulting, green coffee trading and buying, quality control, sales and writing. Mersch currently serves as director of coffee for Philz Coffee. She was elected to the Roasters Guild Executive Council for a two-year term that began in April 2015, and she volunteers with the Specialty Coffee Association (SCA) developing coffee business curriculum. She is a past board member of the SCA and the International Women's Coffee Alliance.

CORRECTION

In Part 1 of this series, we misspelled photographer Ramind Lee's name. We apologize for the error.

FOLLOW YOUR PASSION



Equipment financing for coffee roasters.



Learn more at SpecialtyCoffeeFinance.com or call 800.566.1993 ext 5624

GLOBAL SPECIALTY COFFEE
EXPO

WE'LL SEE YOU AT
GLOBAL SPECIALTY COFFEE EXPO 2017!
Find us at table S2 on the skybridge.