



FOUNDED 1956

RICHARD MUTHER & ASSOCIATES

Consultants in Industrial Management & Engineering

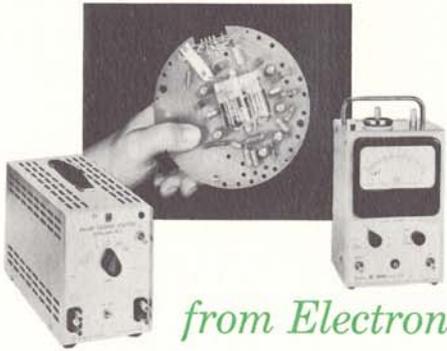
let's talk Results...

COMPANY ORGANIZATION

**Historical Highlights
1956 - 2005**



KEITHLEY INSTRUMENTS



*from Electronic
Measuring Equipment to Heavy Duty Trucks*

Hand or Power Tools



GOLDBLATT TOOL COMPANY



CLIPPER MANUFACTURING CO.

KW-DART TRUCK CO.



Transportation



YELLOW CAB CO. OF MISSOURI



Furniture



FIXTURES MANUFACTURING CO.

- *Job Shop* ● *Service*
- *Process Industry* ● *or Mass Production*

Plastics



ERIE RESISTOR CORP.

Profits have been obtained by these forward-looking companies—and others in many different industries—working with experienced consultants from our firm.

History of Richard Muther & Associates

The table presented here contains a partial and fragmented history of Richard Muther & Associates, from 1956 to 2006. Unfortunately, records and files from the first 30 years were lost to the Leawood Group in the 1980s. Entries prior to 1982 are limited to Dick Muther's recollections and his responses to Lee Hales' questions about the early years, and to Lee's own recollections and files from the 1970s. The mid-1960s are particularly sparse in terms of projects, yet significant work was done during these years. Ed Phillips graciously provided many of the entries from the early 1980s from his personal records. Entries from the recent era (1992 through 2005) reflect Lee's selections and perspectives as to significance. Others might have chosen additional or different entries.

The client list is woefully short and absent many small but still significant projects and clients. No attempt was made to reconstruct the client list. Instead, we have included the "A to Z list" from the left-hand side of RMA's history poster.

The list of publications captures all of the texts and handbooks, but does not include a number of magazine and newspaper articles.

Rather than try to work in which associates joined and departed in what years, we have included instead a master list of associates by decade of service. This list is from Lee Hales' memory, with sincere apologies for any oversights. Also missing is a genealogy of the several consulting firms created by former associates and the many instances in which other firms retained us to train their people or sent them to our training courses.

Richard Muther & Associates
151 Village Parkway, Building 6
Marietta, GA 30067
770-859-0161
www.hpcinc.com/rma.html

In spite of these shortcomings, the table here paints a reasonable picture of RMA's development, contributions, areas of practice, industries served, and its international reach. It also reveals the ups and downs, feasts and famines that are visited upon all professional service firms from time to time.

The fact that the firm has been able to continue and prosper since Dick Muther's retirement in the early 1990s is testimony to the foundations and sound principles that Dick first established in 1956 and perfected over the ensuing 30 years. These include first and foremost, a commitment to *helping our clients to help themselves*, and to do so through systematic planning methods, far superior to the normal muddling through of industry. We have also maintained a commitment to staff with seasoned professionals, equally accomplished at our three missions of consulting, training, and research. Our many training programs and family of systematic methods attest to this commitment.

In putting together this history, I have been reminded of what a privilege it has been to serve in our profession and to do so through Richard Muther & Associates. I and each of the firm's associates have been actively involved in spreading new technologies and in the major socio-economic, industrial, and even political changes of our time. Post World War II expansion and consumerism, Cold War defense investments and de-investments, globalization, computerization, management-labor strife, demise of old-line industries, migration of industry to the South, later to Mexico, and still later to Asia, the rise of Japan, the rise of China... these and many other significant events have triggered our involvement with clients and their facilities, and given us the opportunity to improve industry around the world, and indirectly to improve the well-being of mankind.



H. Lee Hales
President
September, 2006

Staff of RMA -- A reasonably complete list of professional and administrative staff.

Source: Memory of Lee Hales, with apologies to any that I have overlooked.
 Staff of international affiliates not included; student and international interns not included.



Ron Haney 2000s - present
 Deirdre Jasmin 2000s - present
 Jerry Jewson 2000s - present
 Neil Tiffin 2000s - present
 Mike Tracy 2000s - present

Bruce Andersen 1990s- 2000s
 Larry Goodson 1990s
 Dave Jackley 1990s
 Richard Landry 1990s - present
 Ron Matthews 1990s
 Chris Rowen 1990s
 Brian Savoie 1990s - present
 Rob Terrel 1990s
 Carolyn Markey 1990s - 2000s

Dave Dixon 1980s
 Quarterman Lee 1980s
 Ed Phillips 1980s, 2000s - present
 Chas Scheiderer 1980s
 Bill Wrennall 1980s
 Nancy Whitmore 1980s - 1990s

Chuck Cowles 1960s, 70s, 80s, 90s
 Ken McPherson 1960s
 Gerry Mitchell 1960s - 1980s
 Jim Morrison 1960s
 Spalding Schultz 1960s
 Don Selig 1960s
 David Truog 1960s
 Robert Whitaker 1960s
 Chris Cox 1960s
 Betty Cuendet 1960s - 1980s
 Dolly Meyer 1960s - 1980s
 Mel Monsees 1960s - 1970s
 John Morris 1960s - 1970s

George Dickey 1970s
 Bill Fillmore 1970s, 1990s, 2000s
 Lee Hales 1970s, 1990s - present
 Les Hannon 1970s - 1980s
 Stan Hess 1970s
 Arlie Lane 1970s - 1980s
 Tom McCune 1970s
 Charlie Rome 1970s, 1990s
 Jan Van Mourik 1970s
 John Van Reyendam 1970s
 Clarence Brewster 1970s
 Red Thompson 1970s
 John Elweiler 1970s - 1980s

Richard Muther 1950s - present
 Fred King 1950s - 1960s
 Cliff James 1950s - 1960s, 70s, 80s
 John Wheeler 1950s - 1960s, 70s

Facilities & operations from A to Z

A partial list of facilities and operations planned by RMA.

Air conditioners	Flour mills	Pharmaceuticals
Aircraft	Foods	Pipe mills
Aircraft maintenance	Food service equipment	Plastics
Agricultural machinery	Forges	Plating
Ammunition	Foundries	Printers
Antennas	Fresh produce	Printed circuit boards
Apparel	Furniture	Printing presses
Apparel distribution	Galvanizing	Power generation, distribution and services
Appliances	Gaskets	Powdered metallurgy
Automobile assembly	Glassware	Printing and publishing
Auto parts manufacturing	Gears	Plywood
Auto parts distribution	Golf cars	Pumps
Bakeries	Greeting cards	Quarries
Banks	Hand tools	Ready to eat salads
Beverages	Helicopters	Retail distribution
Bolts	Hosiery	Retail stores
Brass mills	Hunting scents	Rubber products
Building materials	Industrial trucks	Semiconductors
Busses	Insurance offices	Sheet metal fabrication
Candles	Irrigation equipment	Shipbuilding
Chemicals	Jewelry	Steel mills
Cell phones	Kitchen cabinetry	Store fixtures
Charcoal	Laboratory equipment	Structural steel fabrication
Coatings	Lumber	Telecommunications equipment
Computers	Machine tools	Technology centers
Compact disks	Material handling equipment	Textiles
Consumer electronics	Medical devices and equipment	Tractors
Construction equipment	Metal production and forming	Transformers
Corporate headquarters	Mining equipment	Truck assembly
Courthouses	Military vehicles	Truck parts
Cranes	Mobile homes	Utilities
Die casting	Molded plastics	Valves
Disk drives	Motorcycles	Vending machines
Direct mail distribution	Motors	Video tape
Elastomers	Motor homes	Water towers
Electrical connectors	Nickel mining	Wire mills
Electronic components	Nuclear submarines	Wire harnesses
Electronic instruments	Nuclear weapons	Xerographic centers (corporate campus printing facilities)
Embassies	Office furniture	Yarn
Engines	Off shore drilling platforms	Zinc mining
Engineering offices	Packaging	
Fasteners	Paper-making machinery	
Feed mills	Pet food	

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1956	<ul style="list-style-type: none"> Dick Muther leaves the Vendo Company to found Richard Muther & Associates as a consulting-training-research company <ul style="list-style-type: none"> Dedicated to “helping our clients help themselves” Small by design – a limit of 10 professionals. First-ever continuing education workshop by the University of Kansas – Midwest Work Courses on Plant Layout and Facilities Planning 	<ul style="list-style-type: none"> Vendo Fixtures Manufacturing Goldblatt Tool Keithley Instruments Jasper Blackburn 		<ul style="list-style-type: none"> <i>Practical Plant Layout</i> published by McGraw-Hill with foreword by H.B. Maynard. Pre-cursor to SLP. Still as current and useful as the day it appeared! 	<ul style="list-style-type: none"> RM elected President, KC Chapter of SAM
1957	<ul style="list-style-type: none"> Trained class of 600 in work sampling of a “live” feed mill operation. Kansas City Municipal Auditorium needed to hold the crowd – probably our largest audience, ever. Attendees from 40 states and overseas. RM is featured speaker at Purdue 3-day conference on manufacturing automation. Plant layout and material flow clinic for Cleveland Engineering Society. Dick Muther is principal speaker at Purdue University conference on manufacturing automation. 	<ul style="list-style-type: none"> Midwest Feed Manufacturers Association Parkersburg Rig and Reel (beginning a 50-year friendship with industrialist Craig Rowley). 		<ul style="list-style-type: none"> <i>Importance of Plant Layout in Cost Reduction</i>, booklet published by American Management Association. “Warehousing Costs” in <i>Feed Age</i>. “Midwest Surveys Mill Time Standards,” in <i>Feed Illustrated</i>. 	<ul style="list-style-type: none"> RM elected national director of SAM
1958	<ul style="list-style-type: none"> Our first work course on material handling analysis – a five-day continuing education conference for the University of Kansas. Site and layout New plant layout for relocation of Dart Truck, later acquired by Kenworth, and the beginning of on-going relationship with PACCAR that continues to the present. First pure “warehouse layout” projects – Midwest Feed and Katz Drug. 	<ul style="list-style-type: none"> A.B. Volvo Jasper Blackburn Midwest Feed Manufacturers Association Dart Truck 	<ul style="list-style-type: none"> Netherlands 	<ul style="list-style-type: none"> <i>Warehouse Planning for Production Efficiency</i>, series of articles for US Department of Agriculture. “Stores & Inventory Under Purchasing?” in <i>Heart of America Purchaser</i>. 	
1959	<ul style="list-style-type: none"> First public training course in Kansas City on Methods-Time-Measurement (MTM) Office moves to 6155 Oak Street, Kansas City, Missouri (remains for 45 years). Major expansion planning project for Volvo automobile plant in Gothenburg. 	<ul style="list-style-type: none"> Carrier Corp Orbit Valve Organization for European Economic Cooperation Norwegian Productivity Institute 	<ul style="list-style-type: none"> Norway Sweden Switzerland Germany 	<ul style="list-style-type: none"> “Getting Your Best Plant Layout,” in <i>FACTORY Magazine</i>. 	<ul style="list-style-type: none"> Dick Muther helps to found the Association of Professional Material Handling Consultants

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1960	<ul style="list-style-type: none"> • First project for Japan Management Association to train 96 engineers from several dozen companies in SLP. Our highest attendance ever for a 5-day work course. Beginning of long relationship with JMA that spreads use of RMA methods throughout Japan and Asia. • First of dozens of workshops for Cahners' Industrial Education Institute. • Early warehouse layout for Katz Drug. • First project for Butler Manufacturing, beginning a 20-year relationship. 	<ul style="list-style-type: none"> • Northern Electric • Katz Drug • Butler Manufacturing 	<ul style="list-style-type: none"> • United Kingdom • Netherlands • Japan • Canada 	<ul style="list-style-type: none"> • "What Makes a Plant Location," in the <i>Kansas Citian</i>. • "Systematic Layout Planning," in <i>Modern Materials Handling</i>. • "S. L. P. – Systematic Layout Planning," in <i>Motor Industry</i>. • Mag Count measurement of product/material transportability. 	<ul style="list-style-type: none"> • First of Dick Muther's 12 years on the College-Industry Council for Material Handling Education (CIC-MHE).
1961	<ul style="list-style-type: none"> • Project for Nissan Motors to help primary suppliers plan 4X capacity increase. Worked with all suppliers on expansion planning and productivity improvement. • "Progress through Planning" seminars in 6 cities for the National Automatic Merchandising Association. 	<ul style="list-style-type: none"> • Maytag • Nissan Motors • Swedish Improvement Institute 	<ul style="list-style-type: none"> • Japan • Sweden • England 	<ul style="list-style-type: none"> • <i>Systematic Layout Planning (SLP)</i> published by Industrial Education Institute. The most popular and widely-referenced work ever written on layout planning. First publication of a pre-engineered planning method for any kind and size of layout! • Rated & reason-supported relationship chart. • AEIOU Vowel-code closeness rating scheme and associated number-of-lines diagramming convention – now standard practice among industrial engineers. • Adaptation of vowel code rating and weighted factor method to layout evaluation. • Adaptation of process charting symbols to layout planning. • Pre-printed working forms for every step of the layout planning process. • "Systematisk Layout Planering," in Swedish publication <i>Affarsekonomi</i>. 	<ul style="list-style-type: none"> • Dick Muther named Chairman of the Industrial Committee, Kansas City Chamber of Commerce. • Dick Muther elected an officer of the Association of Professional Material Handling Consultants.

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1962	<ul style="list-style-type: none"> • Motion picture made on Systematic Layout Planning. • John Wheeler presents series of workshops in Japan on Simplified SLP. 	Dorsey Labs	<ul style="list-style-type: none"> • Netherlands • Japan • Germany • Great Britain • Switzerland • Canada • Mexico 	<ul style="list-style-type: none"> • <i>Simplified Systematic Layout Planning</i> – short form of SLP for small, everyday projects. Goes on to become the most widely distributed book ever written on layout planning. Eventually, more than a half a million copies are printed in 13 languages. • “Simplified Systematic Layout Planning,” in <i>FACTORY Magazine</i>. • “What Makes a Plant Location” in <i>The Kansas Citian</i>. 	<ul style="list-style-type: none"> • Gilbreth Medal awarded to Richard Muther for “outstanding contributions to industrial engineering.” • Muther featured as “Consultant at Large” in UK’s <i>The Manager</i>.
1963		<ul style="list-style-type: none"> • Wagner Electric • Swedish Association of Metalworking Industries 	<ul style="list-style-type: none"> • Sweden • Canada 	<ul style="list-style-type: none"> • “Layouttechniek Voor Iedereen,” in <i>Doelmatig Bedrijfsbeheer</i>. • <i>Plant Layout and Production Line Techniques</i>, chapters appear in the <i>Industrial Engineering Handbook</i> published by McGraw-Hill. • Work begins on a 7-year effort to establish an international standard color code for facilities planning. IMMS as sponsor. 	
1964		<ul style="list-style-type: none"> • Cummins Engine – first year of a 30-year relationship. 	<ul style="list-style-type: none"> • Japan • Germany • United Kingdom 	<ul style="list-style-type: none"> • “Who Lays Out the Plant?” Results of a survey by the American Material Handling Society, published in <i>Modern Materials Handling</i>. • “Order Out of Chaos in the Office,” in <i>The Manager</i> magazine. 	<ul style="list-style-type: none"> • Dorsey Labs named a Top 10 plant for 1964 by <i>FACTORY Magazine</i>.
1965	<ul style="list-style-type: none"> • Planning for a large underground industrial park in Kansas City. Mined limestone shelf is converted to extensive storage, production, and office facilities for multiple tenants. 		<ul style="list-style-type: none"> • Netherlands • Germany • United Kingdom • Canada 		

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1966	<ul style="list-style-type: none"> Hiroshi Ito works in Kansas City office. Later founds Muther Systems Japan. 		<ul style="list-style-type: none"> Netherlands Germany United Kingdom Canada 	<ul style="list-style-type: none"> “The Secret of Plant Layout is Rational Analysis and Evaluation” – feature article in <i>Architectural Record</i>. “A Systematic Approach to Layout Planning” in <i>Pacific Factory</i>. “How to Plan an Office Layout,” in <i>Qualified Contractor magazine</i>. 	<ul style="list-style-type: none"> Dick Muther elected President of the Association of Professional Material Handling Consultants
1967		<ul style="list-style-type: none"> Swedish Employers Federation 	<ul style="list-style-type: none"> United Kingdom Sweden Germany Switzerland Italy Mexico Canada India Japan 	<ul style="list-style-type: none"> Italian edition of <i>Systematic Layout Planning (SLP)</i>. <i>Plant Layout and Design</i> chapter in McGraw-Hill’s <i>Handbook of Business Administration</i>. 	
1968	<ul style="list-style-type: none"> New plant for Aurora Pump – first in the pump industry since WW II. First-ever 5-day working conference on Long-Range Planning of Industrial Facilities (LRPIF) at Lake Placid. First leased training manual to 3M for 3-day Systematic Layout Planning. Twice-annual visits by Japanese industrialists to Kansas City office. Multi-story corporate office plan for headquarters of Hallmark Cards – largest ever Relationship Chart, over 5000 relationships posted by hand! 	<ul style="list-style-type: none"> Aurora Pump Carlisle Corporation Hallmark Cards 	<ul style="list-style-type: none"> Japan 	<ul style="list-style-type: none"> RMA Comp I. Computerized version of SLP and one of the first applications of computers to industrial engineering. Written in FORTRAN. Data entered on punched cards. Widely-heralded at the time along with CRAFT, CORELAP and ALDEP. Spanish edition of <i>Systematic Layout Planning (SLP)</i>. “Putting More Long in Long-Range Industrial Planning” appears in <i>Professional Engineering</i> magazine. “How to Analyze Material Handling Moves” featured in <i>Modern Materials Handling</i>. 	

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1969	<ul style="list-style-type: none"> • Muther International founded in Switzerland. • Three-week working conferences in Winterthur, Switzerland on SLP, SHA, and LRPIF. • Eight weeks of training and start-up assistance to the Swedish Institute of Transport. • First project for Philips, beginning three decades of service. 	<ul style="list-style-type: none"> • EVO – Dutch Transport Users Association (first of a 20-year relationship) • Gould Pump • Philips, NV 	<ul style="list-style-type: none"> • Switzerland • Netherlands • Norway • Finland 	<ul style="list-style-type: none"> • <i>Systematic Handling Analysis (SHA)</i> by R. Muther and Knut Haganas – a complete system for planning of material handling methods. Companion to SLP and the first use of a generalized planning model to develop a specific planning method. • Chapter on plant layout contributed to <i>Encyclopedia of Science and Technology</i>, McGraw-Hill. • “Long Range Planning of Industrial Facilities” appears in the authoritative British journal <i>Long Range Planning</i>. • “Looking Ahead to a Complex Industrial World” address to Planning Executives Institute Board of Governors. 	<ul style="list-style-type: none"> • Aurora Pump featured on cover of <i>Chicagoland</i> as a “model of efficient production.”
1970	<ul style="list-style-type: none"> • More than a dozen in-plant courses offered. In addition to SLP, SHA and facilities planning, we conduct courses on technical writing, oral presentations, supervisory skills, work measurement, work simplification, time study, MTM... • Early 2-day workshop on Effective Warehousing combines elements of inventory control with layout and material handling. • LRPIF working conference in Stockholm. • First-ever work course on Computer-Aided Plant Layout held at University of Wisconsin – presented periodically for next 25 years for the University of California Berkeley, the Society of Manufacturing Engineers, in China, Sweden, Finland... • Long-Range Master Site Plan for ARMCO Steel Kansas City Works – five miles of site along the Blue River. Also equipment layout for a large wire mill. 	<ul style="list-style-type: none"> • Swedish Employers Federation • Philips, NV • ARMCO Steel 	<ul style="list-style-type: none"> • Sweden • Netherlands • Germany 	<ul style="list-style-type: none"> • Czechoslovakian edition of <i>Systematic Layout Planning (SLP)</i>. • “Four Approaches to Computerized Layout Planning” – landmark article appears in <i>Industrial Engineering</i>. • “Plant Layout and Design” chapter in McGraw-Hill’s <i>Handbook of Modern Manufacturing Management</i>. • International Materials Management Society (now Material Handling Management Society) approves RMA-led international standard for color-coding of layouts and facilities plans. • Early (perhaps first) use of scenario-based planning for ARMCO Long-Range Plan. 	<ul style="list-style-type: none"> • Material Handling Award received from SAM (Society for the Advancement of Management)

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1971	<ul style="list-style-type: none"> • First offering of Systematic Storage Planning, incorporating contributions of affiliate Knut Haganas on storage methods. • Training in SHA for the National Packaging Association of Australia. • Facilities and layout plans for several Butler Manufacturing plants, continuing a decade of service. 	<ul style="list-style-type: none"> • Butler Manufacturing • Allis-Chalmers 	<ul style="list-style-type: none"> • Australia • Netherlands • England • Mexico • Japan • Canada 	<ul style="list-style-type: none"> • German edition of <i>Systematic Handling Analysis (SHA)</i>. • <i>Systematic Storage Planning (SSP)</i> is our first method to use 5-section analysis-synthesis pattern of procedures – today’s standard for all company methodologies. • “A Computer Program for Making Office Layouts,” in <i>The Office</i>. 	
1972	<ul style="list-style-type: none"> • Hiroshi Ito founds Muther Systems Japan and becomes affiliate of Muther International. • Martin J. Stone Associates, Pty., becomes Australian affiliate of Muther International. • Long-Range Planning of Industrial Facilities (LRPIF) 5-day Working Conference moves to the University of Colorado in Boulder. Remains home to this conference for several years. • RMA funds scholarship through American Society of Plant Engineers, funding an attendee to the LRPIF conference. • Systematic Planning of Industrial Facilities (SPIF) first presented at the University of Wisconsin. • Material flow and handling plan for nuclear submarine construction at Groton shipyard. Rated by Dick Muther (in 2006) as the firm’s most complex project of all time. 34 classes of material – half radioactive. Sites span 18 miles along the Thames River. (Done before personal computers, spreadsheets and drafting software!) 	<ul style="list-style-type: none"> • Kockums (Sweden) • General Signal Corporation • T. Eaton (Canada) • General Dynamics Quincy Shipyard • General Dynamics Electric Boat -- Groton nuclear submarine yard 	<ul style="list-style-type: none"> • Canada • Australia 	<ul style="list-style-type: none"> • Dutch edition of <i>Systematic Handling Analysis (SHA)</i>. • “Facilities Planning Made Easy” appears in <i>FACTORY Magazine</i> – featuring our week-long working conference on long-range planning, this is one of our most popular reprints in one of the last issues of an iconic publication. • “Computer Program for Office Layouts,” in <i>International Business Equipment</i>. 	<ul style="list-style-type: none"> • Dick Muther is featured speaker at National Packaging Association Show.
1973	<ul style="list-style-type: none"> • Network analysis performed the old fashioned gravity model way – demand table, freight rate table and 4-function electronic calculator. Takes 16 hours per “run.” • Methods engineering and innovative conveyor/fixture designs for automotive harness manufacture. • First project involving automatic guided vehicles for bottle-making plant in Australia. • New plant planning for Cristaleria using SLP 	<ul style="list-style-type: none"> • Whitaker Cable Corporation – multiple assignments • Lockwood Corporation • Cristaleria (Mexico) • Deere & Company – multiple plants. • General Dynamics • Digital Equipment Corporation – first of 	<ul style="list-style-type: none"> • Australia • India • Brazil • Finland • New Zealand • Netherlands • Canada • France • Japan 	<ul style="list-style-type: none"> • Dutch edition of <i>Systematic Layout Planning (SLP)</i>. • <i>Planning for New Facilities and Modifications to Existing Facilities</i> chapter in <i>Facilities and Plant Engineering Handbook</i> – our fourth McGraw-Hill handbook! • “Planning an Organization Structure” appears in <i>S.A.M. Advanced Management Journal</i> – Landmark 	<ul style="list-style-type: none"> • RM awarded Honorary Doctorate from Lund University in Sweden

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	<p>and SHA.</p> <ul style="list-style-type: none"> • First of numerous in-plant work courses for Deere & Company in Long-Range Planning. • Training in Australia for ANPAC and IIEA. • Layout and production line planning for Maytag begins decade of assistance to leading appliance manufacturers. 	<p>ten plants during the mid- to late 1970s.</p> <ul style="list-style-type: none"> • Maytag 		<p>article applies the rated and reason supported relationship chart and diagram to organization and job design.</p> <ul style="list-style-type: none"> • SLP featured on the cover of Italian magazine <i>Impiante</i>. 	
1974	<ul style="list-style-type: none"> • All time record? Of 109 projects completed! • New model year layout plan for St. Joseph plant of Whitaker Cable. • Strategic expansion plan for Valmont Industries – pioneer of center-pivot irrigation. • Rearrangement and flow improvements for Aurora Pump Company. • Long-range plan for Aurora Pump using ratio-trend and projection. • LRPIF working conference presented in London by Dick Muther and Derek Mandersen. • Dick Muther and Knut Haganas present a series of conferences in Australia. 	<ul style="list-style-type: none"> • Whitaker Cable Corp. – multiple assignments • Valmont Industries • Aurora Pump – multiple assignments. 	<ul style="list-style-type: none"> • Australia • England 	<ul style="list-style-type: none"> • “The Mag Count,” in <i>Modern Materials Handling</i>. • “Planning Your Industrial Facility” is cover story in <i>Mid-America</i> magazine. 	
1975	<ul style="list-style-type: none"> • 15-year master land use plan for the last old-growth redwood operations of Simpson Timber. More than 800 acres at 8 sites -- log decks, mills, and plywood plants. • Master plan for the Arcata, CA site, the rainiest spot in North America. Environmental protests as we plan! Marches on Sacramento. Loggers counter-demonstrate and threaten to cut down palm trees flanking the State Capitol. • Manufacturing & distribution strategic plans for Looart Press – our first work with large-scale direct mail/catalog distribution. <ul style="list-style-type: none"> - Multi-site and multi-story corporate HQ plans. - East Coast plant site selection. - Site selection for new plant in Colorado. - Order processing error reduction using pick-to-light and bar code scanning – our first project with these technologies. • Relocation and consolidation of manufacturing and R&D for Gordon Johnson Company. 	<ul style="list-style-type: none"> • Simpson Timber – multiple assignments • Looart Press – multiple assignments. • Gordon Johnson Co. • RO Corp. • Russell, Birdsall, Ward (RBW) • Olin Corporation munitions plant. 	<ul style="list-style-type: none"> • Norway • Canada • Mexico • Netherlands 	<ul style="list-style-type: none"> • Spanish edition of <i>Practical Plant Layout</i> – demonstrating the continued interest in this work 20 years after its appearance! • Knut Haganas publishes early version of Systematic Physical Distribution Analysis, applying 4-phase structure and 5-section analysis-synthesis pattern of procedures. 	<ul style="list-style-type: none"> • Richard Muther named Fellow in SAM. • Richard Muther named to advisory council for Department of Industrial Engineering at Kansas State.

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	<ul style="list-style-type: none"> • Quality and processing improvement for maker of fabricated metal forms. • Master site plan for RO Corp. • 2-Day course on Physical Distribution planning co-presented in Oslo with affiliate Knut Haganas. • 26 public training courses in the U.S. and several overseas; 24 in-plants – an all time record. 				
1976	<ul style="list-style-type: none"> • Turnaround plan for the pioneering Vendo Co. Stock down from \$70 to \$4 with bankruptcy in sight. Relocation to non-union Mississippi after losing control of work rules and labor costs. All too common in the 1970s, and a harbinger of America’s looming industrial decline! • Manufacturing strategy and relocation plan for multiple sites and divisions of Allis-Chalmers – California, Wisconsin, Illinois, and South Carolina. • Site location for a new center pivot irrigation plant – our 3rd project in this rapidly expanding industry tapping the vast Ogallala Aquifer. • Acquisition assessment of a center pivot manufacturing business. • Courthouse master plan for Hamilton County TN. Security is the big issue after judges attacked and fleeing inmates shot – another trend we’d like to forget! 	<ul style="list-style-type: none"> • Vendo • Allis-Chalmers, multiple assignments. • Butler Manufacturing – multiple assignments. • EVO • Olin Corp. • Digital Equipment • Valmont Industries 	<ul style="list-style-type: none"> • The Netherlands 	<ul style="list-style-type: none"> • “Environmental Impact Assessments” appears in <i>Plant Engineering</i> magazine – step-by-step instruction on compliance with new federal laws. 	
1977	<ul style="list-style-type: none"> • Storage master plan for Mannheim site of John Deere – a 100-year old facility that first made horse-drawn coaches and was bombed by the US in WW-II as a tank factory. • Bar code identification of work-in-process for Steelcraft manufacturing. • Site and expansion planning for Steelcraft. • Multiple public workshops in office space planning as “bull pens” and private offices are replaced with office landscape and modular furniture systems. Updated office layout course presented more than 30 times in next four years as offices are re-tooled around info tech! 	<ul style="list-style-type: none"> • John Deere – multiple assignments • Allis-Chalmers – multiple assignments. • Vendo – multiple assignments. • Steelcraft – multiple assignments. • Swedish Industrial Development Agency (SIDA) • EVO – Transport Users Assoc. of The 	<ul style="list-style-type: none"> • Sweden • Norway • The Netherlands • Canada 	<ul style="list-style-type: none"> • <i>Office Layout Planning</i> published by the National Office Products Association. Based on Simplified SLP this book becomes a popular guide for planning of open plan offices using modular furniture systems. • “Six steps to making an office layout” appears in <i>The Office</i> magazine. • Three chapters in McGraw-Hill’s <i>Management Handbook for Plant Engineers -- Determination of Requirements, Evaluation of Existing Space Organization, and Site Selection</i> 	

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	<ul style="list-style-type: none"> • Sweden retains us to train Communist block and leftist, 3rd-world engineers on industrial facilities planning. Moscow U. grads get physical and bring the Cold War to a pick-up basketball game! • Knut gets Lee arrested for smuggling trunk of Glenfiddich and Winston's into Norway. Tells him to claim exemption since Americans won the war! • First course on "Computer-Aided Facilities Planning" popular for several years as computer usage and CAD permeate industrial engineering. We benchmark manual vs. automated methods and compare available software. 	<ul style="list-style-type: none"> • Netherlands • Swedish Employers Federation • Speedstar Division of Koehring – new plant layout. • Olin Corp. • Storage Tek • Digital Equipment • Amana 		<ul style="list-style-type: none"> – marking our appearance in five McGraw-Hill Handbooks. • "Productivity of Professionals" in Jim Kennedy's <i>Consultants News</i>. RMA named by Kennedy to Top 100 consulting firms for several years. 	
1978	<ul style="list-style-type: none"> • Distribution center site search for Simpson Building Supply. • Office space planning for Seaboard Allied Milling. • First of numerous guest lectures at M.I.T on facilities planning – 30 years after Dick Muther first served as an assistant professor. • Long-Range Planning of Industrial Facilities working conference first presented at Virginia Tech. • Death of George Dickey – a great loss. 	<ul style="list-style-type: none"> • Allis-Chalmers – multiple assignments. • Simpson Timber • Seaboard Allied Milling • National Office Products Association • Storage Tek • Digital Equipment • Modcomp • Steelcraft Division of American Standard 	<ul style="list-style-type: none"> • Mexico 	<ul style="list-style-type: none"> • Portuguese edition of <i>Systematic Layout Planning (SLP)</i> published in Brazil. • "The Changing Office Environment" appears in <i>Modern Office Procedures</i> chronicling the spread of CRTs, task lighting, modular and open plan furnishings – all taken for granted today but a departure from the previous 50 years of office layout and design. 	

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1979	<ul style="list-style-type: none"> • First facilities planning courses for University of California at Berkeley to serve the rapidly expanding Silicon Valley. Electronics permeate our lives as PCs appear. • Multi-story corporate office plan for CAPP Homes. • Strategic plan and site location for Butler Agricultural Div. • Long-Range Facilities Plan for Blue Cross & Blue Shield of Kansas City -- Ratio-trend analysis reveals costly consequences of million dollar jury awards and defensive medicine, compounded by and aging population – trouble ahead for America! 	<ul style="list-style-type: none"> • Butler Manufacturing • Hydril • Storage Tek • Digital Equipment • Amana • Tappan 	<ul style="list-style-type: none"> • Sweden 	<ul style="list-style-type: none"> • <i>Systematic Planning of Industrial Facilities, Volume</i> – summarizing 20 years of methods development by Richard Muther & Associates and an integrated approach to planning any kind of industrial facility. • 2nd Dutch edition of <i>Systematic Handling Analysis (SHA)</i>. • Our first presentation to the then newly formed <i>Warehousing Education and Research Council WERC</i> – on computerized layout. • Survey on Computer-Aided Facilities Planning finds 1 in 5 planners using computers – <i>Annual Proceedings of the Numerical Control Society</i>. 	
1980	<ul style="list-style-type: none"> • Peak year of the oil boom in North America. We experience it through several assignments <ul style="list-style-type: none"> - Multi-site warehousing and materials management plan for National Supply Co. – leading distributor and world’s largest maker of drilling rigs. - Facilities planning for Cameron Iron Works, leading maker of high pressure valves. - Facilities planning for Hydril, leading maker for drill bits. - Work Simplification for Delta Southern, fabricator of off-shore oil rigs. • Introduction of 3-day workshop: Effective Planning of Storage/Warehouse Facilities, incorporating our work on Systematic Storage Planning with affiliate Knut Haganas – precursor of today’s highly popular warehouse layout course. 	<ul style="list-style-type: none"> • Marion Labs • National Supply • Digital Equipment 	<ul style="list-style-type: none"> • Mexico • Canada • The Netherlands • Japan • Australia 	<ul style="list-style-type: none"> • <i>Systematic Planning of Industrial Facilities, Volume II</i> – more than 400 pages of step-by-step project guidance supported by more than 200 illustrations and working forms. • Dominant Considerations approach to site and facilities planning. • Spanish translation of <i>Systematic Handling Analysis (SHA)</i>. • “The Long and Short of Facilities Planning,” in <i>Material Handling Engineering</i>. 	<ul style="list-style-type: none"> • Engineering Citation awarded by Society of Manufacturing Engineers for work in material handling.

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1981	<ul style="list-style-type: none"> • First-ever 5-day working conference on Facilities Planning for Fast-Growth, High-Tech Industries presented in Palo Alto for University of California at Berkeley. Runs for three years in high-tech areas of Silicon Valley, Route 128, and Florida. • First of three years of training courses in Brazil. • IMAM of Sao Paulo joins Muther International. • Dick Muther has quadruple by-pass heart surgery. 	<ul style="list-style-type: none"> • Johnson & Johnson Orthopedics • Digital Equipment • Marion Labs 	<ul style="list-style-type: none"> • Brazil • Belgium • Mexico 	<ul style="list-style-type: none"> • <i>Simplified Systematic Layout Planning</i> translated into Spanish. • <i>Systematic Storage Planning</i> appears in <i>Distribution Quarterly</i>, authored by Australian affiliate Martin Stone. • “How to Develop Industrial Slums” in MIT’s <i>Technology Review</i>. Initially rejected as not appropriate for the magazine, this article becomes one of its most requested reprints. • “Are You Really Planning Long-Range” in <i>Area Development</i> magazine. 	<ul style="list-style-type: none"> • Jim Kennedy, editor and publisher of <i>Consultant’s News</i> names RMA to top 100 consulting firms.
1982	<ul style="list-style-type: none"> • Chinese Ministry of Machinery retains Richard Muther for three months to train 34 planner-consultants from all over China. Courses in SLP, SHA and SPIF are followed by laboratory projects in more than a dozen plants. Graduates set up consulting offices throughout China to help plan its transition from primitive and heavy industry to mass production. • Facilities consolidation plan at FMC for the Bradley Fighting Vehicle. May have been our largest project in terms of fees (approximately \$900K to \$1 million for the 1st phase). Team included: <ul style="list-style-type: none"> - Arild Amundsen (Norway) - Peter Ellis (Australia) - Knut Haganas (Norway) - Les Hannon - Stan Hess - Cliff James - Ken Knott (Penn State University) - Arlie Lane - Quarterman Lee - Ed Phillips - Charlie Rome - Chas Scheiderer - Bill Wrennall Mike Tracy works on this project for Smith, Hinchman, Grylls. • Systematic Storage Planning (SSP) presented at University of Kansas 	<ul style="list-style-type: none"> • FMC • Ministry of Machinery, People’s Republic of China 	<ul style="list-style-type: none"> • Sweden • Brazil 	<ul style="list-style-type: none"> • First Chinese edition of <i>Systematic Planning of Industrial Facilities (SPIF) Volume I</i> published by the Chinese Ministry of Machinery. Primitive hand-written publication. Figures are blue-line prints pasted by hand. • Japanese edition of <i>Systematic Planning of Industrial Facilities (SPIF)</i>, published by Japan Management Association – marking 20+ years since Dick Muther’s first assistance to Japan. 	

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1983	<ul style="list-style-type: none"> • Firm turned over to associates. Richard Muther retires from active management and involvement in day-to-day activities. • We help Computervision develop software for space (layout) planning. 	<ul style="list-style-type: none"> • FMC • SECO Products • Kuhlman Die Casting • RTE Corporation 	<ul style="list-style-type: none"> • Mexico • Brazil 	<ul style="list-style-type: none"> • “Scandinavian Models of Employee Participation” appears in <i>S.A.M. Advanced Management Journal</i> – based on an innovative Norwegian project with Knut Haganas for Thune-Eureka. • “Planning in Productivity,” in <i>Engineering Digest</i>. • Ed Phillips authors articles on facilities planning for <i>Midwest Contractor</i> magazine. 	
1984	<p>Principals operate as The Leawood Group</p> <ul style="list-style-type: none"> • Sandoz Pharmaceuticals – northern NJ – Master Site Planning – many buildings on a campus type site (with a primate zoo for diabetes research located in the middle of a multi-story laboratory). • We return to award-winning Dorsey Labs plant 20+ years later to assist with layout and master site planning. • We help with software development and debugging of Invotek’s facilities planning computer program. • Demonstration of computer programs for facilities planning at the University of Iowa. 	<ul style="list-style-type: none"> • Marion Labs • Anaheim Manufacturing (Insinkerator) • Sandoz • Dorsey Labs • Hopkins Manufacturing • Intertherm 	<ul style="list-style-type: none"> • Japan 	<ul style="list-style-type: none"> • <i>Computer-Aided Facilities Planning</i>, landmark text summarizes 14 years of development from the punched card era of RMA Comp I to interactive personal CAD and relational DBMS. Also features RMA facilities planning methods and contributes to their wider adoption. 	
1985	<ul style="list-style-type: none"> • Long-Range Planning of Industrial Facilities working conference first presented at University of Kansas. • New training course on Materials Handling and Storage increase RMA’s profile in warehousing. • Knut Haganas dies. Another great loss. • Major materials handling study funded by Maritime Administration (MARAD) at Avondale and other shipyards throughout the U.S. 	<ul style="list-style-type: none"> • Maritime Administration • Avondale Shipyards • Variform, Inc. • La-Z-Boy 	<ul style="list-style-type: none"> • United Kingdom 	<ul style="list-style-type: none"> • <i>Computerized Facilities Planning</i> edited by Lee Hales for IIE. • “Plant Layout and Materials Handling” chapter in the <i>Materials Handling Handbook</i>. 	
1986	Principals operate as The Leawood Group				
1987	Principals operate as The Leawood Group			<ul style="list-style-type: none"> • Chinese edition of <i>Systematic Handling Analysis (SHA)</i>. 	

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1988	<ul style="list-style-type: none"> • Dick Muther returns to training and consulting after 5-year absence during which he develops High Performance Planning – a template and pre-planned approach for any kind of planning. • First offering of training course in High Performance Planning. • Long-Range/Strategic Planning of Industrial Facilities first offered by University of Missouri at Kansas City. • First facilities planning courses for George Washington University. 			<ul style="list-style-type: none"> • Chinese edition of <i>Systematic Layout Planning (SLP)</i>. • <i>High Performance Planning</i> is the first full text publication of Muther’s generalized planning model, since applied to develop systematic planning procedures in more than a dozen fields. 	
1989	<ul style="list-style-type: none"> • Dick Muther presents High Performance Planning to International Society of Facilities Executives (ISFE) annual meeting at MIT. • Project Planning and Management presented at University of Missouri Rolla. 	<ul style="list-style-type: none"> • Willamette Pump • EVO – Transport Users Assoc. of The Netherlands -- marking 20 years of service to this leading logistics organization. • Sveriges Rationaliseringsforbund (SRF) 	<ul style="list-style-type: none"> • Netherlands • Sweden • Belgium • England 		<ul style="list-style-type: none"> • Richard Muther awarded the EVO “Decade Award” for contribution to European Distribution Methods.
1990	<ul style="list-style-type: none"> • Dick Muther presents first course on Project Management using High Performance Planning (HPP) model (at George Washington University). 			<ul style="list-style-type: none"> • Be a Winner with Planning,” by R. Muther in <i>Fundraising Management Magazine</i>. • “Twelve Ways to Produce Planning Failures, by R. Muther in <i>Network Magazine</i>. 	
1991				<ul style="list-style-type: none"> • Chinese edition of <i>Systematic Planning of Industrial Facilities – Vols. I and II</i>. (2nd Chinese edition is typeset and with professional figures and artwork, replacing primitive 1982 edition). 	

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1992	<ul style="list-style-type: none"> • Planning Manufacturing Cells conducted at University of Wisconsin Milwaukee. Becomes our most popular course in the early '90s with more than 1000 graduates throughout the world. • RMA becomes a division of High Performance Concepts, Inc. Lee Hales becomes President – 20 years after first joining the firm as a 24-year old draftsman. Dick Muther becomes Chairman. Main office moves to Marietta (Atlanta) Georgia. • Dick Muther helps a Chinese team apply SPIF to the Jinqao Special Processing Zone, an early model district in the new Pudong industrial region. Team members use RMA methods to plan subsequent zones in this massive urban and industrial development east of Shanghai. 		<ul style="list-style-type: none"> • China • Thailand • Japan 	<ul style="list-style-type: none"> • <i>World Class Facilities Management</i>, benchmark survey results published and presented at MIT INSITE conference • <i>Systematic Master Site Planning (SMSP)</i> first presented at George Washington University. 	
1993	<ul style="list-style-type: none"> • We help Saginaw Steering Gear implement machining cells – 50 years after a Saginaw cell is featured in Dick Muther's <i>Production Line Technique!</i> The success of this re-discovery leads to more than a dozen assignments for plants in 7 countries. • Dick Muther teaches SLP and SHA at Deere & Co., marking over 20 years since our first in-plant education for this industry leader. • Facilities planning for Labconco – over 30 years of service to this KC client. • Dick Muther teaches courses in Turkey – 55 years after serving as instructor in organization and management at Robert College in Istanbul. • Warehouse/Distribution Center layout debuts at Georgia Tech Logistics Institute. Becomes our most popular course with more than 2,000 graduates in 10 countries by 2005. • Business process reengineering applied to facilities management of GM Pontiac facilities. 	<ul style="list-style-type: none"> • General Motors – multiple assignments • Deere & Co. • Labconco – multiple assignments • The Taylor Company • Herman Miller • Philips, NV 	<ul style="list-style-type: none"> • Mexico • Turkey • Canada • Belgium • Japan 	<ul style="list-style-type: none"> • First RMA use of new <i>MAXiT</i> method for business process reengineering, developed by High Performance Concepts, Inc. • Perfection of scenario-based planning first applied in 1970 at ARMCO and later described in <i>SPIF Volume II</i>. Complete instructions and worksheets for Scenario Definition, Developing Alternative Scenarios, and Selecting Scenarios. Published by Dick Muther as IHPP forms, applicable to all kinds of planning – not just facilities. 	<ul style="list-style-type: none"> • Dick Muther receives Reed-Apple Award from Material Handling Education Foundation.

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1994	<ul style="list-style-type: none"> • With the Cold War clearly over, our methods are used to plan the decommissioning and remediation of the Nuclear Weapons Complex at Rocky Flats, Hanford, and Oak Ridge – more than 60 square miles in all! • Dick Muther teaches SLP, SHA and SPIF at Cummins Engine – marking three decades of their use in this industry leading company. • Philips Semiconductor facility layout planning in Bangkok • For the first time, more than one third of our projects involve warehouses, offices and non-manufacturing facilities – an early indicator of America’s shift to service and distribution. 	<ul style="list-style-type: none"> • U.S. Dept. of Energy • Cummins Engine • General Motors • Philips, NV 	<ul style="list-style-type: none"> • China • Thailand • Canada • The Netherlands 	<ul style="list-style-type: none"> • <i>Simplified Systematic Handling Analysis</i> fully documents the short form of our popular SHA method, first published in 1969. Ron Haney is a co-author. • <i>Leaders Guide and Case Book for Simplified Systematic Layout Planning.</i> 	<ul style="list-style-type: none"> • Dick Muther delivers keynote “Nothing Happens Without Movement” at the Int’l Conference on Advanced Techniques & Equipment for Materials Handling (ATMEH) in Shanghai.
1995	<ul style="list-style-type: none"> • Our deepest project! Material handling analysis in the world’s largest underground zinc mine – 1100 meters below sea level. • Master site plan for Corpus Christi Army depot – 2 million sq. feet of helicopter repair in 15 buildings; net worth \$600 million. • Focused factory and plant rearrangement for Crown Equipment (5 plants) • Our first warehouse management systems (WMS) project. • Warehouse plan for the world’s largest theme park. • Surveys and consolidation planning for 34 Georgia-Pacific distribution centers. • Material handling plan for Ford Motor company’s largest plant – 4 million sq. ft. under roof. • A busy year in training -- 22 public courses; 16 in-plant – just one shy of our all-time record of 39 in 1974. We are all tired! 	<ul style="list-style-type: none"> • Noranda • Crown Equipment – multiple assignments. • Harley-Davison • Georgia-Pacific • Ford Motor Co. • Sara Lee 	<ul style="list-style-type: none"> • Canada 		

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1996	<ul style="list-style-type: none"> • Site and layout planning for GM’s first joint-venture plant in China – part of a larger deal to build an assembly plant with Shanghai Motors in Pudong, the same area master planned with our SPIF methods in 1992. • Irradiation/sterilizer handling plan for Becton-Dickinson. • A year of chemicals and batch processing: <ul style="list-style-type: none"> - Master site plan and plant layout for Parker+Amchem’s flagship chemical plant. - Layout and material handling plans for WM Barr. - Cell planning for DuPont Dow elastomers. • Another busy year in training – 26 public courses; 11 in-plant! • Long-Range/Strategic Planning of Industrial Facilities – reestablished at University of Kansas. • Last public workshop on computer-aided facilities planning – computer aids are now a “given.” 	<ul style="list-style-type: none"> • PACCAR – we are selected to help reengineer inbound logistics and double inventory turns. • General Motors. • WM Barr. • Parker+Amchem (now Henkel) • DuPont-Dow • Delphi Automotive – first of many international assignments. 	<ul style="list-style-type: none"> • Brazil • China • Japan 	<ul style="list-style-type: none"> • <i>Simplified Systematic Planning of Manufacturing Cells</i> presents the short form of our widely-used SPMC method. Bill Fillmore and Charlie Rome contribute under Dick Muther’s guidance. 	
1997	<ul style="list-style-type: none"> • A record year in the modern era of the firm -- 55 projects completed! But only half of the 1974 record of 109. • Expansion planning at KenMex, the largest truck plant in Mexico. • The Korean government retains us to teach small and medium-sized Korean manufacturers how to set up effective cells. • An all-time of record 31 public training courses – one every 8 days, including 16 workshops on cell planning and lean principles in 5 countries. 	<ul style="list-style-type: none"> • PACCAR – multiple assignments in three countries. • Eaton Corp. • Corpus Christi Army Depot. 	<ul style="list-style-type: none"> • Korea • Mexico • Brazil • United Arab Emirates • Singapore • Canada 	<ul style="list-style-type: none"> • Portuguese edition of <i>Simplified Systematic Planning of Manufacturing Cells</i>. 	

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1998	<ul style="list-style-type: none"> • More than 50 projects completed – another intense year. • Work cell planning and plant opening for Delphi Automotive plant in Shanghai. • 25 square mile, site-wide material handling analysis for the largest steel mill in North America. (Once proud Bethlehem Steel – the company where Frederick Taylor developed Scientific Management and standardized work in 1898 – has lost control of its costs!). • Dick Muther presents our methods to Philips engineers, marking nearly 30 years of their use since the first Dutch translations of SLP and SHA! • Our first project for Delta Air Lines – including our first-ever custom software development. 	<ul style="list-style-type: none"> • Delta Air Lines – multiple assignments. • Bethlehem Steel – multiple assignments. • Delphi – multiple assignments. • Philips NV, marking three decades of service to this global electronics manufacturer. • Ericsson, Inc. • PACCAR – multiple assignments. • Whirlpool – cell planning. 	<ul style="list-style-type: none"> • China • Guatemala • The Netherlands • Mexico 		<ul style="list-style-type: none"> • Crown Equipment named Warehouse of the Month by Modern Material Handling.
1999	<ul style="list-style-type: none"> • Expert witness in a law suit over poor facility planning. Stock wouldn't fit and the moving vans had to take it back to the old plant! • Bar code system plan for a Peruvian distribution center. • Line feeding system design for the world's largest cell phone manufacturing plant. • Master plan for 600,000 square feet of warehousing at Delta's Main Overhaul Base. • Our first year in which more days were spent on warehousing than on manufacturing – the US has changed! • Large-scale work sampling study for Delta Air Lines Worldport We use electronic recorders and software to help determine the proper staffing levels. Thousand of observations in a 24 x 7 stores operation at the world's busiest airport. • Long-range (10-year) facilities plan for The Container Store, a rapidly growing specialty retailer. 	<ul style="list-style-type: none"> • Delta Air Lines – multiple assignments. • The Taylor Company. • Nokia • Cardone Industries. • Bethlehem Steel. • The Container Store 	<ul style="list-style-type: none"> • Peru • Canada 	<ul style="list-style-type: none"> • Third Edition of <i>Systematic Planning of Industrial Facilities, Vols. I and II</i> – updating the component planning methods of SLP and SHA to their latest form. • Lee Hales' comments appear in article on lean manufacturing and its impact on facilities design, <i>Building Design & Construction</i>. 	<ul style="list-style-type: none"> • Dick Muther receives Don Francis International Achievement Award from the Materials Handling & Management Society.

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2000	<ul style="list-style-type: none"> • Our first-ever SAP software implementation role for Delta materials management. • The year of E-Commerce! <ul style="list-style-type: none"> - Fulfillment center for The Container Store. - Facility design education for Majestic Realty a leading California developer of warehouses and DCs. - Lecture at M.I.T on E-Commerce facilities for Institute of Corporate Real Estate. • Work cell planning for 5 manufacturers. • Technology center plan in Juarez, Mexico. • We help Cincinnati Machine, devastated by imports, vacate its magnificent engineering and HQ, making way for a Sam’s Club. (Today, their famous 2 million sq. ft. Oakely plant awaits the wrecking ball. Another tragedy of trade and monetary policies!) 	<ul style="list-style-type: none"> • Delphi Automotive. • Delta Air Lines – multiple assignments • Mack Truck. <ul style="list-style-type: none"> - Silgan Plastics – first of many locations served. 	<ul style="list-style-type: none"> • Canada • Mexico 	<ul style="list-style-type: none"> • <i>Planning Manufacturing Cells Fundamentals</i> – our first on-line training course debuts as one of the first on-line courses available from Society of Manufacturing Engineers and the first on a manufacturing topic from innovative Michigan Virtual University. • First RMA website and free availability of Working Forms on the World Wide Web. Forms for cell planning made available to enrollees of on-line training. 	
2001	<ul style="list-style-type: none"> • SAP implementation support in 2nd year for Delta Air Lines. • Relocation plan for the Teaching Company. • New manufacturing system for The Teaching Company implementing lean manufacturing principles throughout the company. • World Trade Center attacked on day 2 of 3-day training course. Class decides to complete the course even though all must drive for 8 to 15 hours to reach home. • New plant planning for Caldwell Tank – to replace a facility dating from the Civil War and expanded for World War I production. 	<ul style="list-style-type: none"> • The Teaching Company – multiple assignments. • Delta Air Lines. • Bekins 3PL facility feeding world’s largest ice cream plant in LeMars, Iowa. • Fresh Express. • Medtronic. • Rapistan 	<ul style="list-style-type: none"> • Singapore 	<ul style="list-style-type: none"> • <i>Industrial Engineering Support for Materials Management, and Planning a Manufacturing Cell</i> appear in the 5th edition of <i>Maynard’s Industrial Engineering Handbook</i> – marking our continuous presence with multiple chapters since this industry bible first appeared in 1956. • <i>LEANplan</i> methodology developed by Jerry Jewson and Lee Hales. • <i>Systematic Container Planning (SCP)</i> introduced at ProMat. Dell Computer and Orbis make presentations in our workshop. Comprehensive method for planning returnable container systems in a high-performance supply chain. • Russell Brooke presents for HPC at ProMat to full house on RFID. Presents RFID session in SCP workshop. 	

Year	Noteworthy projects (firsts, largest, unique, instructive or contributing to subsequent relationships and accomplishments) Also training courses.	Key clients	International activity	Publications & Developments (methods, forms, etc.)	Awards & Recognition
2002	<ul style="list-style-type: none"> • 800,000 sq. ft. layout and material handling plan for The Container Store -- our largest ever for a new distribution center. • Technology center layout in Wuppertal, Germany • Quality improvement plan for Empire Candle – application of quality function deployment to every aspect of candle making. 	<ul style="list-style-type: none"> • Kalkan (Master Foods) – multiple assignments in material handling. • Baxter Healthcare. • Abbott Labs. • Fresh Express. • The Container Store – continuing a 4-year relationship with one of America’s Best Places to Work. 	<ul style="list-style-type: none"> • Republic of China (Taiwan) • Singapore • United Arab Emirates • Germany 	<ul style="list-style-type: none"> • <i>Planning Manufacturing Cells</i> published by Society of Manufacturing Engineers. Major contributions by Bruce Andersen. Also by Jerry Jewson and Bill Fillmore, building upon foundation by Dick Muther and Institute of High Performance Planning. • <i>Fundamentals of Manufacturing Cell Planning</i> video and workbook published by SME. • “Proven Space Saving Strategies” appears in <i>Material Handling Management</i> in print and on-line – our first on-line magazine article. 	
2003	<ul style="list-style-type: none"> • Technology center layout for Shanghai, China • Site and plant layout for a new greenfield charcoal manufacturing plant – the industry’s first in 20 years. • Facilities planning and analysis of AGVS and AS/RS for the Federal Reserve Bank. Work with AGV system design marks 30 years since our first project with this technology. • Operations improvement and cost reduction (turnaround) plan for venture investors in an old-line manufacturing company. • Lean production line layout for next generation E-Z-GO golf car. 	<ul style="list-style-type: none"> • Textron adopts SLP as an essential method in Lean Manufacturing implementation. • Delphi – multiple assignments applying SLP. • Federal Reserve Bank • Fresh Express – multiple assignments. • Silgan Plastics – multi-site warehouse planning. • Delta Air Lines. • Clorox – first assignment in a multi-year relationship. 	<ul style="list-style-type: none"> • Singapore • China 	<ul style="list-style-type: none"> • <i>Work Cell Design</i> chapter in McGraw-Hill’s <i>Manufacturing Engineering Handbook</i> – the ninth McGraw-Hill handbook to which we have contributed since 1956, and 60 years since Dick Muther’s first McGraw-Hill publication in 1944. • Expanded RMA web-site includes Capsule Summaries for key methods, free planning guides, and expanded list of Working Forms for layout, material handling, and cell planning. Forms since downloaded by hundreds of planners in more than 20 countries. 	

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2004	<ul style="list-style-type: none"> Logistics study for The Container Store – How to support big-box, specialty retail and home delivery in Manhattan, New York City? Conversion of an apparel manufacturing plant to distribution as manufacturing is completely outsourced to Asia. Innovative workplace fixture designs achieve 50% productivity improvement for a bench assembler. We also fabricated the prototype fixtures. Classical IE continues to work! We train 90 Interlake personnel in SLP and SHA -- helping them to help their customers with better planning! 	<ul style="list-style-type: none"> PACCAR – multiple assignments mark 45 years of service to this industry leader! JC Sales – multiple assignments for this remarkable distributor to 99-cent stores. Clorox – multiple assignments applying SLP. Textron – multiple assignments applying SLP. WE Energies – multiple assignments in warehouse planning. 	<ul style="list-style-type: none"> Canada 	<ul style="list-style-type: none"> Lean Manufacturing course offered on-line by Institute of Industrial Engineers. Jerry Jewson is the developer. <i>Fundamentals of Manufacturing Cell Planning</i> reissued on DVD by SME. “Material Handling Matters” appears in <i>Arab Construction World</i> magazine. Lee Hales’ comments appear in article on intermodal facilities, <i>Building Design & Construction</i>. 	<ul style="list-style-type: none"> New Container Store DC named Warehouse of the Month by Modern Materials Handling.
2005	<ul style="list-style-type: none"> Dick Muther’s 50th year of public workshop instruction through RMA! First offering of Strategic Planning of Supply Chain Facilities, reflecting North America’s shift from manufacturing to distribution. First-ever training course in Russia, helping developers to design world-class warehouses needed to support growing consumer wealth. Layout for US Consulate in Juarez, Mexico to expand capacity for legal immigration by 10x. Technology center layout in Krakow, Poland. First-ever consulting work in France at AGCO tractor factory. Major engagements involving information technology and business process redesign: <ul style="list-style-type: none"> Automatic data collection and control systems for several clients. New product development cycle time reduction. Build-to-order instead of to stock. 	<ul style="list-style-type: none"> AGCO Corp. successor to Hesston and Allis-Chalmers, renewing 40-year service relationship to the Hesston plant. Multiple assignments in the US and France. Fort Dodge Animal Health – multiple assignments. Teaching Company – multiple assignments. Textron – multiple assignments applying SLP. Clorox adopts SLP as an essential method in World Class Manufacturing Programs. 	<ul style="list-style-type: none"> Australia France Poland Russia Turkey – We affiliate with Hakan Bütüner and IMECO. 	<ul style="list-style-type: none"> <i>Fundamentals of Plant Floor Layout</i> reissued on DVD by SME – still in demand 40 years after the first film on Systematic Layout Planning! Extensive interview on planning effective warehouses appears in <i>Commercial Real Estate</i>, a leading Russian trade magazine. 	

About Richard Muther & Associates

Established in 1956 by Richard Muther, our firm has achieved an international reputation as planners of profitable industrial plants, warehouses, office and service facilities. Operating in the broad field of industrial management and engineering, we have experience in all aspects of facilities planning and operations improvement. Our services are delivered through leading-edge consulting, training, and research.

RMA consulting projects are conducted on the principle of *"helping the client help himself."* Using our proprietary, systematic methods, we enable client teams to get better results in record time. And over the course of an assignment, clients master our approaches for their future use. When needed, we will collect data, perform analyses, and make presentations for approval, but our preferred role is to organize, advise, coach, challenge, show by example, and audit the work being done. This keeps your investment low and builds the confidence and skills of your personnel. Our success rate on hundreds of assignments attests to the wisdom of this approach. We assist in the following activities:

- Plant & warehouse layout
- Material handling analysis
- Planning for lean and cellular manufacturing
- Master site planning
- Office space planning
- Site location & selection
- Long-range planning & facilities strategy
- Consolidation & relocation planning

For more information, please contact us at:

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RMA training courses are conducted in-plant and through leading universities and trade associations. These have been attended by thousands of managers and engineers in 20 countries of the world. Each work course is based upon one or more of our systematic, step-by-step techniques. We offer formal certification in our more popular methods, and license our materials for continuing use by qualified and certified instructors. We currently offer in-plant seminars on more than a dozen topics. Among the most popular:

- Warehouse & Distribution Center Layout
- Systematic Planning for Manufacturing Cells
- How to Plan for Rearrangement & Expansion
- Long-Range/Strategic Planning of Industrial Facilities

RMA research projects have included a number of original surveys on management and engineering practices. We also arrange benchmarking and study missions to help our clients improve their facilities management practices.

Our research has resulted in the publication of 9 books, with translations into more than 20 language editions. We have authored over 100 technical papers and presentations, and a dozen chapters for handbooks and encyclopedias. Our associates have served as guest lecturers at the Massachusetts Institute of Technology, Georgia Tech, The Swedish Royal Institute of Technology, and several other universities.

Members of our firm have been recognized with citations and awards from leading institutions and professional societies including: the Materials Handling Award of the Society for the Advancement of Management; the Honor Award from the Materials Handling & Management Society; the Engineering Citation Award from the Society of Manufacturing Engineers, and the Gilbreth Medal for outstanding contributions to industrial engineering.

