Small Business Success Story

(A never ending work in progress)

Richard Brady, P.E., BCEE
Chairman and CEO, Richard Brady & Associates

BRADY

Today's Discussion

- How did the business start and when?
- Growth Path?
- Challenges of Growth?
- Lessons Learned?

Here's a story, about a man named Brady…

- Born in the Portsmouth Naval Hospital, VA 1956
- Father - Navy Chief, 43 years
- Mother – San Diego Tuna Fishing Family
- Lived in Subic Bay, 1962-1964
- Clairemont High School, Class of 1974
- SDSU, Civil Engineering, 1980

Helen Coelho, Portuguese Festival, 1946

TRIBUNE-SUN, San Diego 12, California, Monday, June 10, 1946

'Little Queen' Crowned at Portugese Festival

Mary Josephine Silva, center, was crowned the little queen of the Portuguese Festival of the Holy Ghost yesterday, at St. Agnes Catholic church, following a solemn high mass celebrated by The Rt. Rev. Msgr. Lawrence Forrestal. Her handmaidens are Bentina Gonsalves, left, and Helen Coelho, right. More than 2000 San Diegans of Portuguese extraction took part in the ceremonies. Adult queen crowned at the ceremony was Miss Mary Ferreira.

James M. Montgomery, 1962

McGraw-Hill HANDBOOKS

WATER TREATMENT PLANT DESIGN

FOURTH EDITION

AMERICAN WATER WORKS ASSOCIATION
AMERICAN SOCIETY OF CIVIL ENGINEERS

The Early Years

May 3, 1999 – August 12, 2004

Brady Five Company Rules

1. No Whining Allowed
2. Do the Right Thing
3. Always Tell the Truth
4. Use Your Best Judgement
5. Have Fun (or we'll find you another job)

Alvarado, 1946 – 66 mgd

BRADY' Signature Project – 200 mgd Alvarado WTP Project

35 MG Earl Thomas Reservoir 2004 – World's Largest

Featured in
CE Magazine

Rick Brady,
Project Manager

CIVIL ENGINEERING NEWS

WATER TREATMENT

Earl Thomas Prestressed-Concrete Reservoir Is World's Largest

The largest prestressed-concrete reservoir in the world was recently constructed at San Diego's Alvarado Water Treatment Plant (WTP). The reservoir replaces a 50-year-old, 35 million gal (132 million L) reinforced-concrete and earthen dam reservoir that had been unusable for the past decade because of cracking, seismic instability, and inadequate water circulation. The new, partially buried reservoir is to be surrounded by palm trees and have a road across its roof.

Named for Earl Thomas, a former superintendent of the city's water department, the new potable water reservoir is nestled in the ground near the front of the WTP's main building. Its 406 ft (124 m) diameter reinforced-concrete roof is all that can be seen. The reservoir has been designed so that its roof is in keeping with the Moorish design of the main building, which has a roof of red tiles and a tower capped with an onion-shaped dome.

In tests carried out on the previous reservoir, engineers found that it was outdated and near collapse. "It was basically like a house of cards ready to fall down," says Richard Brady, P.E., DEE, the president of San Diego–based Richard Brady & Associates, which managed the design of the new reservoir. The old reservoir became a stumbling block to city managers as they looked for ways to increase the WTP's capacity so that it would be able to serve the city's growing population. When they found they had no alternative but to replace the tank, they wanted something that would stand the test of time and meet San Diego's growing needs. They were convinced that prestressed concrete would last longer and require less maintenance than conventionally reinforced concrete.

The new reservoir is also better suited to San Diego's active seismic zone than the preceding tank. Rubber pads 1¼ in. (32 mm) thick have been placed between the wall and the roof, and pads 2 in. (51 mm) thick between the wall and the floor will act as shock absorbers during an earthquake. Cables have been installed near the pads to manage seismic displacement. The reservoir can thus resist both vertical and horizontal earthquake loads, as well as water movement and overturning moments.

According to Brady, the 241 columns supporting the roof would typically be roughly 24 in. (610 mm) in diameter. However, in this case the columns were designed to support the additional loads imposed by vehicles on the road and by the 2 ft (0.6 m) of soil that will be added if administrators choose to fully bury the reservoir, an option they are considering. To support the additional loads, the column diameters are 30 in. (762 mm). The roof is 18 in. (457 mm) thick.

The reservoir's circular concrete wall tapers in thickness from 38 in. (965 mm) at the base to 12 in. (305 mm) at the top and contains little steel reinforcement. To prestress the concrete, vertical steel tendons 1⅛ in. (35 mm) in diameter were embedded in the wall and posttensioned, causing the wall to compress. According to Galit Ryan, P.E., the vice president of sales and marketing for DYK, Inc., of El Cajon, California, the company that designed and constructed the reservoir, the compressed concrete wall will resist cracking and last much longer than steel. To counteract water-induced loads, ⅜ in. (9.5 mm) diameter steel cables, each comprising seven strands, encircle the tank.

The concrete and earthen dam reservoir contained a single pipe that conveyed water into and out of the tank. After 40 years of use, the pipe became inadequate owing to its size and configuration, and the water quality decreased because residual water sat stagnant in the tank for extended periods. The new reservoir contains multiple pipelines and internal baffles to better circulate the water and maintain higher water quality.

The reservoir will be fully functional this summer, and it will increase the WTP's storage capacity from 42 million gal (159 million L) to 77 million gal (291 million L). The WTP will then serve approximately half of San Diego's 1.2 million residents. Other engineering firms associated with the project include CH2M HILL, of Englewood, Colorado, and Malcolm Pirnie, Inc., of White Plains, New York. The general contractor for the project was C.E. Wylie Construction Company, of San Diego.

—*Brett Hansen*

The Earl Thomas Reservoir is nestled in the ground near the main building of San Diego's Alvarado Water Treatment Plant. The reservoir will hold 35 million gal (132 million L) of potable water, making it the largest prestressed-concrete tank in the world. After backfilling and landscaping have been completed, palm trees will grace the reservoir's perimeter and a road will traverse its roof.

$4.59M Revenue in 2004

FEBRUARY 7, 2005 SAN DIEGO COUNTY'S AWARD-WINNING BUSINESS WEEKLY WWW.SDBJ.COM

SAN DIEGO BUSINESS JOURNAL

ENGINEERING FIRMS*

Ranked by local full-time licensed engineers as of Feb. 1, 2005

Rank (last year)	Company Address Web site	Telephone Fax	Local full-time licensed engineers: 2005 2004 % change (loss)	Total staff	Gross billings†: 2004 2003 $ Millions % change (loss)	Areas of practice††	Breakdown of 2004 billings by percentage: Commercial/Industrial	Public works	Residential	Wastewater/water	Other	Recent completed projects††	Managing partner(s)	Year est. locally
1 2	Project Design Consultants 701 B St., #800, San Diego 92101 www.projectdesign.com	(619) 235-6471 (619) 234-0349	47 40 18	194	wnd wnd NA	Civil engineering, land planning, landscape architecture, land surveying	11	25	57	7	0	SDSU Trolley Construction Survey, Broadway 655 Office Tower	Greg Shields, William Dick, Rex Plummer	1976
2 4	URS Corp. 1615 Murray Canyon Road, #1000, San Diego 92108 www.urscorp.com	(619) 294-9400 (619) 243-2975	39 35 11	151	wnd wnd NA	Program/construction management, geotechnical, transportation, environmental	21	64	3	12	0	San Diego Unified School District, Mission Valley East Light Rail Extension	Rick Webb, Steve Brinigar	1959
3 3	Rick Engineering Co. 5620 Friars Road, San Diego 92110 www.rickengineering.com	(619) 291-0707 (619) 291-4165	36 39 8	224	wnd wnd NA	Civil engineering, land use planning, transportation and traffic engineering, surveying	8	20	60	7	5	Lomas Verdes, Rancho Carillo	Lyle Gabrielson[1]	1955
4 1	PBSbJ 175 Calle Magdalena, Encinitas 92024 www.pbsj.com	(760) 753-1120 (760) 753-0730	35 42 (17)	179	$451 $389 16	Civil engineering, transportation planning, construction management	0	0	0	10	90	Moonlight Beach Storm Drain Treatment Plant, UCSD Long Range Development	na	1970
5 5	Parsons Corp. 110 W. A St., #1050, San Diego 92101 www.parsons.com	(619) 685-0085 (619) 687-0401	31 34 (9)	77	wnd wnd NA	Planning, design, program and construction management for water/wastewater	5	45	0	50	0	Olivenhain Dam, Mission Valley East	Richard Trembath, Robert Sergeant	1962
6 6	Mactec Engineering and Consulting, Inc. 6177 Sky Park Court, San Diego 92123 www.mactec.com	(858) 278-3600 (858) 278-5300	25 26[1] (4)	143	wnd $23.01 na	Geotechnical engineering, construction materials testing and inspection	25	50	10	15	0	Padres Petco Ballpark, East Mesa Juvenile Detention Facility	na	1954
7 9	Bureau Veritas/Berryman & Henigar 11590 W. Bernardo Court, #100, San Diego 92127 www.bhinc.com	(858) 451-6100 (858) 451-2846	24 22 9	95	$10.8 $10.4 4	Municipal engineering, public finance, construction management	0	90	0	10	0	na	Scott Kvandal[1]	1979
8 7	Geocon Inc. 6960 Flanders Drive, San Diego 92121 www.geoconinc.com	(858) 558-6900 (858) 558-6159	23 25 (8)	98	$16.5 $15 10	Geotechnical and environmental engineering, construction materials testing	15	10	60	10	5	Torrey Hills and Vista Sorrento Parkway Master Planned Community	Michael S. Chapin[2]	1971
9 11	RBF Consulting 9755 Clairemont Mesa Blvd., #100, San Diego 92124 www.rbf.com	(858) 614-5000 (858) 614-5001	22 19 16	92	$13.6 $12 13	Planning, civil, water resources, traffic engineering, surveying	20	20	30	15	15	Victor Valley WRA Wastewater Treatment Plant Design, Stonebridge Estates	Richard A. Rubin	1969
10 8	CDM[3] 1925 Palomar Oaks Way, #300, Carlsbad 92008 www.cdm.com	(760) 438-7755 (760) 438-7411	22 21 5	79	$9.5 $9.5 0	Water resources, wastewater, hazardous waste, industrial, transportation	0	0	0	80	20	Early Starts Project at Miramar Water Treatment Plant	William Hunter, Lawrence Davidson	1988
11 10	Kleinfelder, Inc. 5015 Shoreham Place, San Diego 92122 www.kleinfelder.com	(858) 320-2000 (858) 320-2001	21 21 0	114	$12 $11.8 2	Geotechnical engineering, environmental engineering, materials testing	40	40	0	15	5	San Diego City Schools, Wal-Mart Kearny Mesa	John Moossazadeh	1985
12 16	Dudek & Associates, Inc. 605 Third St., Encinitas 92024 www.dudek.com	(760) 942-5147 (760) 632-0164	20 16 25	137	$10.91 $10.17 7	Water, wastewater, reclaimed water, storm water, management	5	30	0	65	0	City of Coachella Wastewater Treatment Plant Expansion	Michael Metts, John Pastore, George Litzinger	1980
13 20	HDR Engineering Inc. 5444 Fanham St., #300, San Diego 92123 www.hdrinc.com	(858) 712-8400 (858) 712-8333	20 12 67	85	$7.33 $6.94 6	Water and wastewater design, water resources, management consulting, civil engineering	40	20	0	40	0	Metropolitan Wastewater Department, Environmental Services Laboratory	David LeCureux	1999
14 19	Nolte Associates, Inc. 15070 Ave. of Science, #100, San Diego 92128 www.nolte.com	(858) 385-0500 (858) 385-0400	20 13 54	72	$8.6 $7.3 18	Civil engineering, water/wastewater, drainage/flood control	5	15	45	35	0	4S Ranch - Boys & Girls Club and Community Park, Wildcat Canyon Road	Bill Miller	1969
15 12	P+D Consultants, Inc. 8954 Rio San Diego Drive, #610, San Diego 92108 www.pdconsultants.com	(619) 291-1475 (619) 291-1476	19 18 6	64	$11.2 $9.9 13	Civil engineering, land use planning, environmental	10	0	45	0	45	Otay Ranch Town Center, Quarry Falls	John L. Kinley[2], Chuck Moore[2]	1975
16 13	Kimley-Horn and Associates 517 Fourth Ave., #301, San Diego 92101 www.kimley-horn.com	(619) 234-9411 (619) 234-9433	18 18 0	43	$12.41 $11.96 4	Civil engineering, transportation, transit, traffic, site development, flood control	36	44	5	15	0	I-5/Genesee interchange PSR, sewer and water group jobs: 762, 765, 767, 768	Chuck Spinks, Jim Roberts, Dave Sorenson	1991
17 17	Burkett & Wong Engineers 3434 Fourth Ave., San Diego 92103 www.burkett-wong.com	(619) 299-5550 (619) 299-9934	17 16 6	50	$5.9 $5.53 7	Structural engineering, civil engineering, land surveying, land planning	55	30	10	5	0	San Elijo Middle School, Portico Condominium Complex	Timothy Youn	1971
18 18	Hunsaker and Associates San Diego, Inc. 10179 Huennekens St., San Diego 92121 www.hunsakersd.com	(858) 558-4500 (858) 558-1414	15 14 7	150	$23 $20.2 14	Land planning, civil engineering, surveying	10	10	70	10	0	La Costa Greens, Otay Ranch Windingwalk	Dave Hammar, Lex Williman, Alisa Vialpando, Dan Smith	1987
19 NR	Earth Tech 9675 Business Park Ave., San Diego 92131 www.earthtech.com	(858) 536-5610 (858) 536-5620	15 18 (17)	62	$8.1 $5.4 50	Transportation, construction, water/wastewater, environmental, structural	na	na	na	na	na	U.S. Postal Service UST compliance, Sorrento Valley reservoiring	Joseph A. Cazares	1970
20 NR	Richard Brady & Assoc. 9333 Murphy Canyon Road, #220, San Diego 92123 www.richardbrady.com	(858) 496-0500 (858) 496-0505	14 10 40	47	$4.59 $3.57 29	Civil, structural, mechanical, electrical, instrumentation and controls	5	20	0	75	0	35 MG Earl Thomas Reservoir, Alvarado WTP expansion Phase 4	Richard Brady[2]	1999
21 15	Testing Engineers-U.S. Laboratories, Inc. 7895 Convoy Court, #18, San Diego 92111 www.tesd.com	(858) 715-5800 (858) 715-5810	12 17 (29)	89	$10.2 $11.8 (14)	Geotechnical engineering, materials testing, construction inspection, environmental	25	60	5	10		Biogen Idec Nobel Research Facility	Mark Baron	1946
22 21	Nasland Engineering 4740 Ruffner St., San Diego 92111 www.nasland.com	(858) 292-7770 (858) 571-3241	12 10 20	52	wnd wnd NA	Civil engineering, land surveying and land planning	30	30	30	10	0	Park to Bay link, Lincoln High School	Steven D. Nasland, D.K. Nasland	1959
23 22	Boyle Engineering Corp. 7807 Convoy Court, #200, San Diego 92111 www.boyleengineering.com	(858) 268-8080 (858) 292-7432	11 9 22	32	$6 $8 (25)	General civil, water/wastewater, surveying, transportation, permitting	0	30	0	60	10	SR-56 four lane freeway, Otay second pipeline	Clark Ferrnen	1951
24 NR	Hope Engineering, Inc. 1301 Third Ave., #300, San Diego 92101 www.hopeengineering.com	(619) 232-4673 (619) 235-4675	11 11 0	21	wnd wnd NA	Structural engineering	50	5	15	0	30	Donald P. Shiley Center for Science and Technology, Cymer CSD6 headquarters	James A. Amundson	1993
25 23	Ninyo & Moore 5710 Ruffin Road, San Diego 92123 www.ninyoandmoore.com	(858) 576-1000 (858) 576-9600	9 9 0	92	$6.1 $5.44 12	Geotechnical engineering, materials testing, environmental consulting	20	30	10	40	0	Home Depot stores, Poway City Hall	Avram Ninyo	1986

BRADY Relationships at the Time

MWH
MONTGOMERY WATSON HARZA

MALCOLM PIRNIE

CDM Camp Dresser & McKee Inc.

C. E. WYLIE CONSTRUCTION CO.
General Building and Engineering Contractors

DYK INCORPORATED

CH2MHILL

KLEINFELDER

HDR

The Federal “Experience”

August 12, 2004 – August 11, 2013

YEAR ONE - 2005

$0 FEDERAL REVENUE

One interview win

$5M/2 year contract

The Big Break

Marines wrestle with water threat:

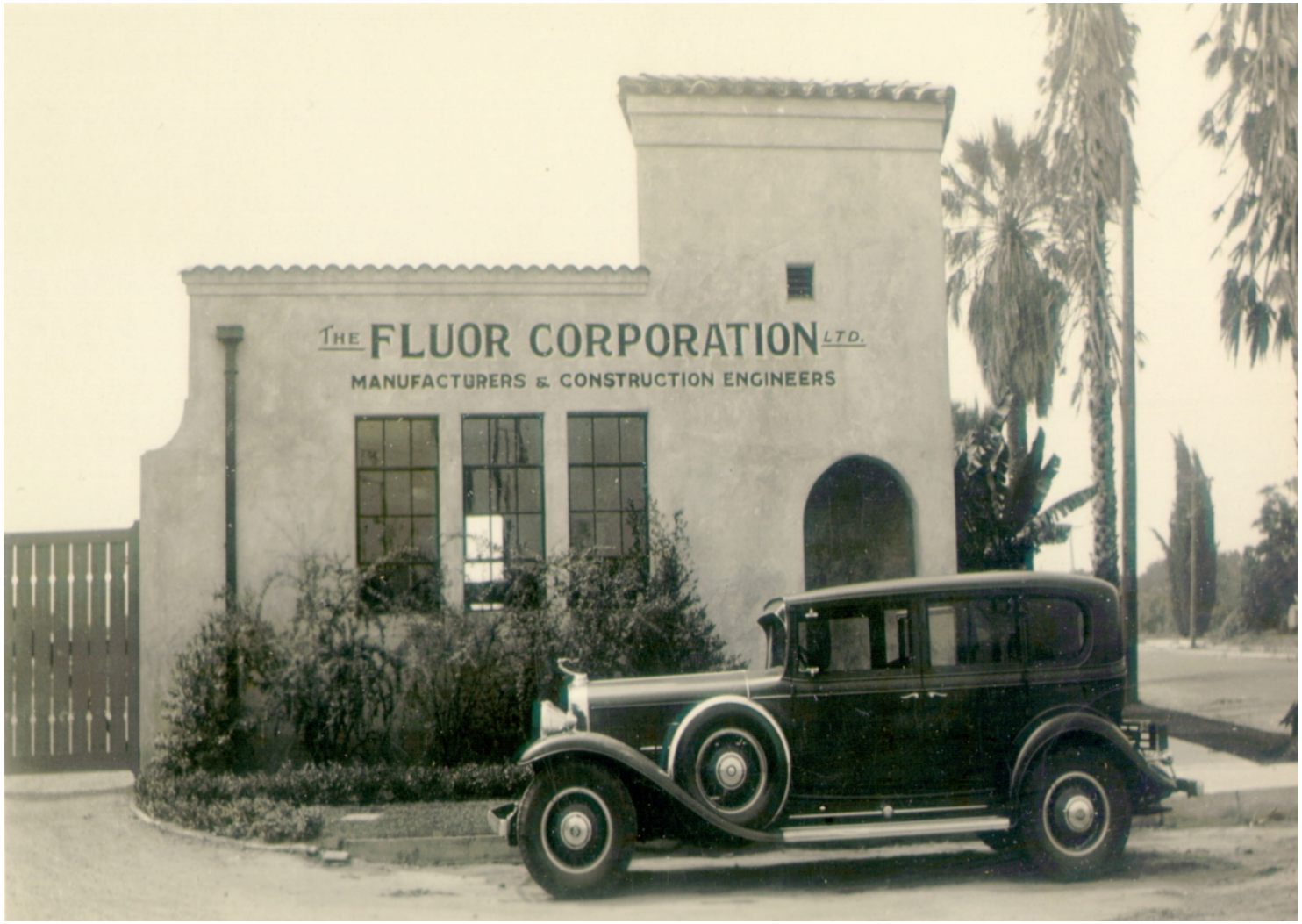
LEAD

in drinking water at Camp Pendleton

January 29, 2006

The San Diego Union-Tribune

The Second Big Break – Call from Fluor (Founded in 1912)



3-21

GUEST

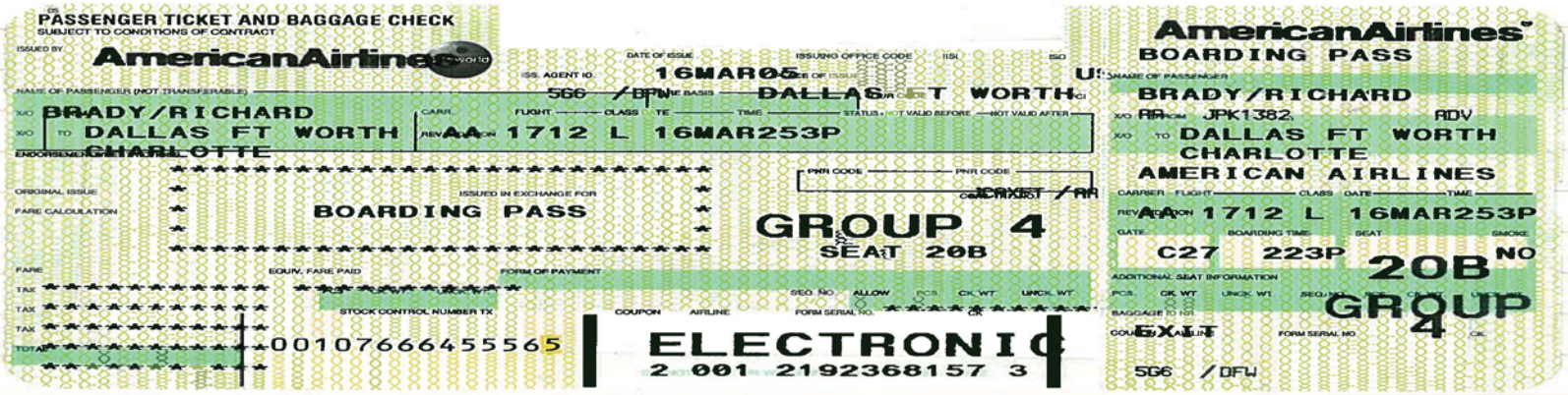
Name Rick Brady

Company

Expiration Date 3-18-05

FLUOR.

FORM G213-2-200 (Rev. 4-01)



PASSENGER TICKET AND BAGGAGE CHECK
SUBJECT TO CONDITIONS OF CONTRACT

ISSUED BY AmericanAirlines oneworld

DATE OF ISSUE 16MAR05 ISSUING OFFICE CODE

NAME OF PASSENGER (NOT TRANSFERABLE)

BRADY/RICHARD

TO DALLAS FT WORTH CHARLOTTE

CARR. FLIGHT CLASS TIME STATUS NOT VALID BEFORE NOT VALID AFTER

AA 1712 L 16MAR253P

ENDORSEMENTS/RESTRICTIONS

ORIGINAL ISSUE

ISSUED IN EXCHANGE FOR

BOARDING PASS

FARE CALCULATION

GROUP 4

SEAT 20B

FARE EQUIV. FARE PAID FORM OF PAYMENT

TAX

TAX

TAX

TOTAL

STOCK CONTROL NUMBER TX

0010766645556 5

COUPON AIRLINE

ELECTRONIC

2 001 2192368157 3

AmericanAirlines

BOARDING PASS

NAME OF PASSENGER

BRADY/RICHARD

AA FROM JPK1382, ADV

TO DALLAS FT WORTH CHARLOTTE

AMERICAN AIRLINES

CARRIER FLIGHT CLASS DATE TIME

AA 1712 L 16MAR253P

GATE BOARDING TIME SEAT SMOKING

C27 223P 20B NO

ADDITIONAL SEAT INFORMATION

GROUP 4

5G6 /DFW

FLUOR®

Richard Brady & Associates

Engineers & Constructors

Iraq Water Treatment Plant Redesign

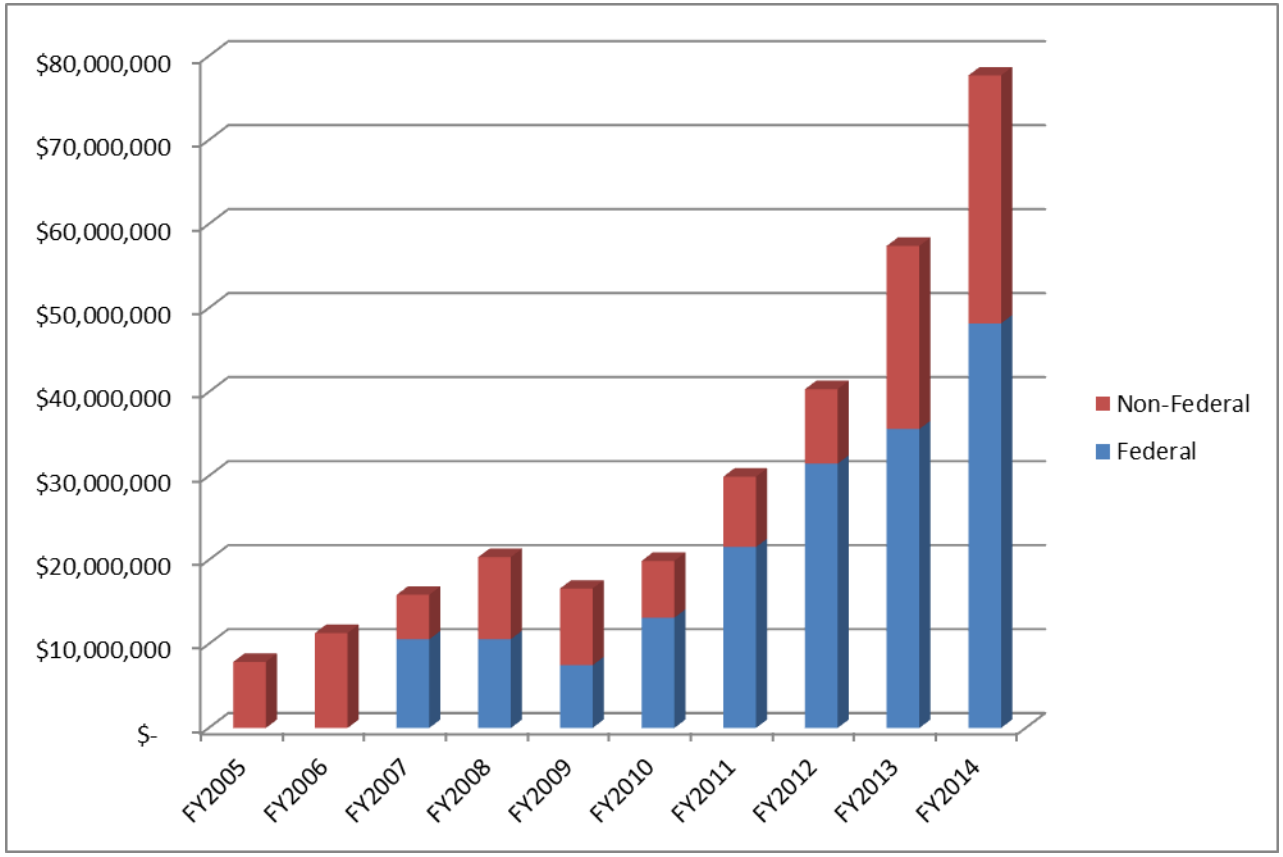
August 28, 2006

Fluor and Brady Major Successes

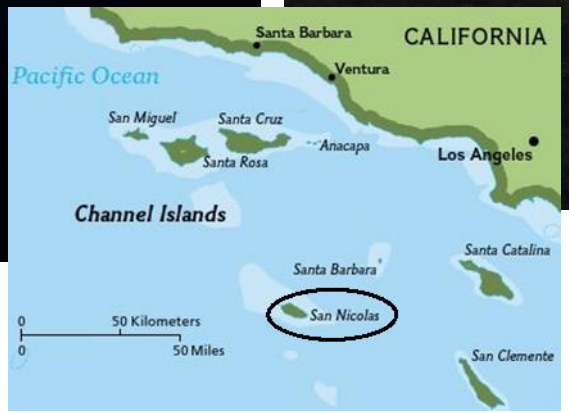
$490,000,000 in contracting capacity awarded in less than 2 years

Brady's HQ 2007-2017

Brady Growth 2005-2013



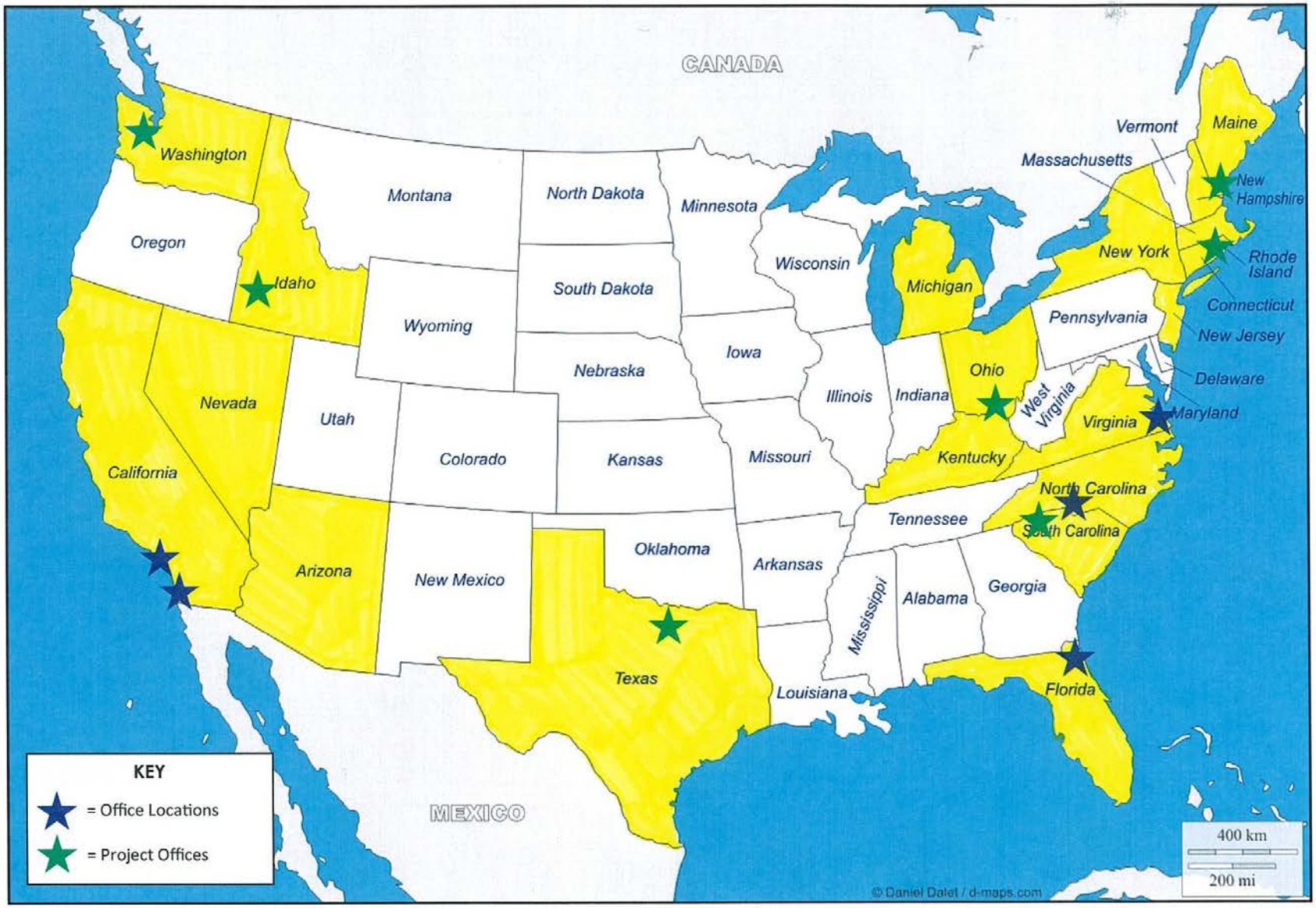
U.S. Naval Facility
San Nicolas Island, CA
630,000 gallon prestressed concrete reservoir



2012- Jacksonville/Mayport NAS
$37,810,258/8 years

El Centro NAS 1 MG Reservoir Rehabilitation Project

The Grand Finale – 2013
32 MG Reservoir @Savannah River
$43,257,849


CANADA
Washington
Oregon
Idaho
Montana
North Dakota
Minnesota
Wisconsin
Michigan
New York
Vermont
Maine
Massachusetts
New Hampshire
Rhode Island
Connecticut
New Jersey
Pennsylvania
Delaware
Maryland
Virginia
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Tennessee
North Carolina
South Carolina
Georgia
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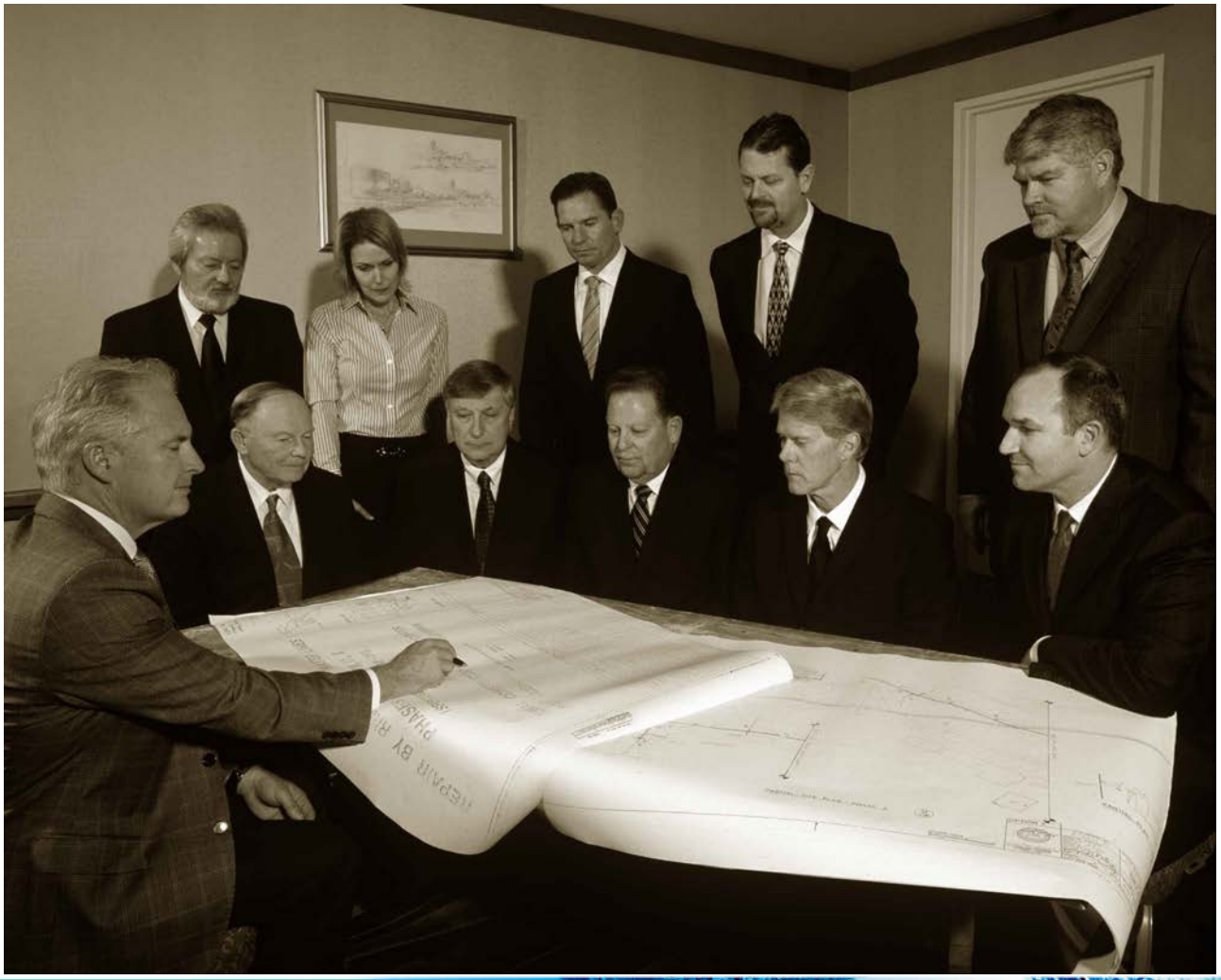
Louisiana
Arkansas
Missouri
Iowa
South Dakota
Wyoming
Nebraska
Colorado
Kansas
Utah
Nevada
California
Arizona
New Mexico
Oklahoma
Texas
MEXICO
KEY
= Office Locations
= Project Offices
400 km
200 mi
© Daniel Dalet / d-maps.com

Richard Brady & Associates, 2013



Challenges of Growth

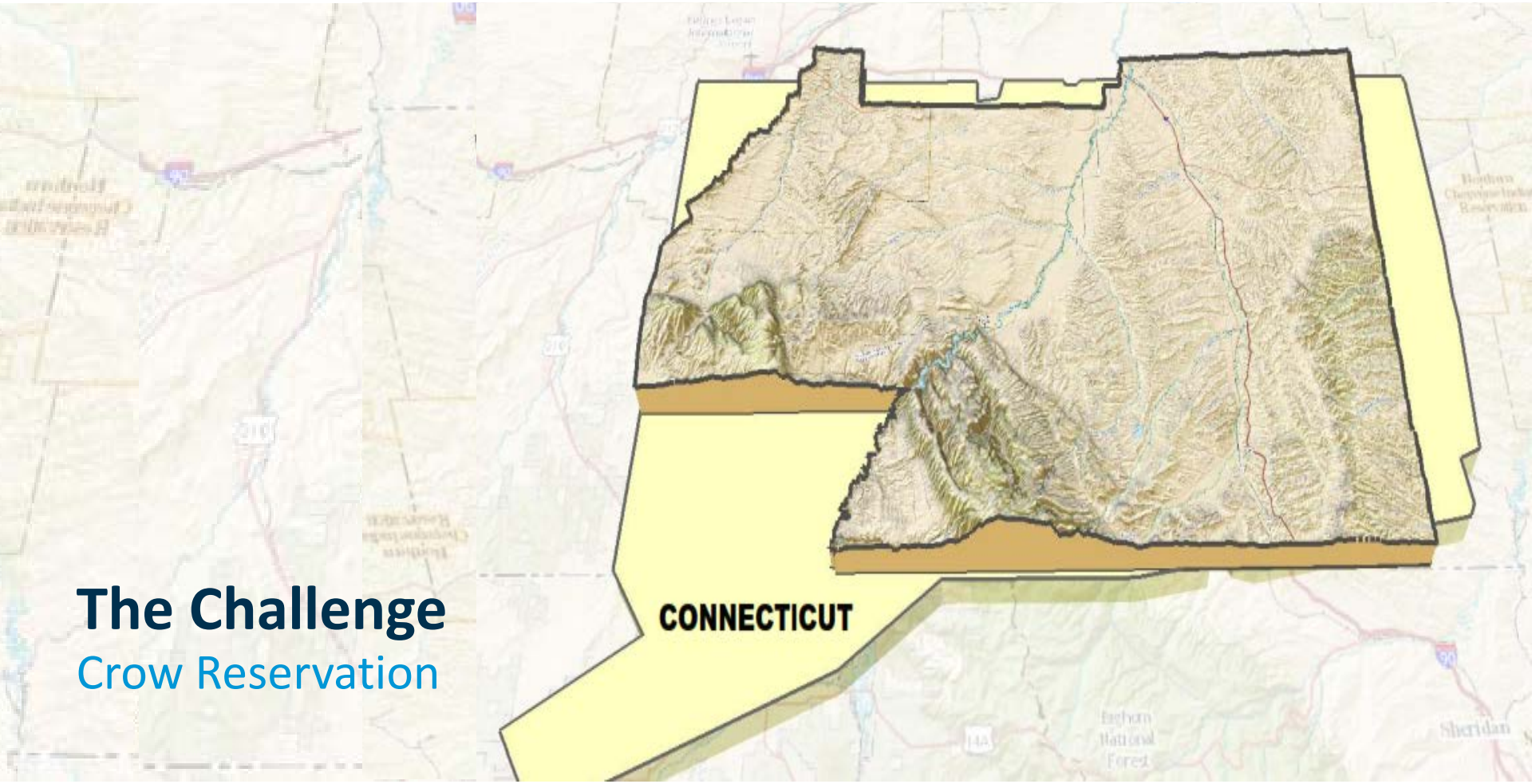
- Cash Flow
- Line of Credit
- Bonding
- “Growing yourself to death”

Where are we today?

- Back to the basics
- Sold off our Federal Government business line
- $15M steady annual revenue
- CM Firm of the Year, 2018
- Crow Tribe $246M Water Project

The Challenge

Crow Reservation



LESSONS LEARNED?

LESSONS LEARNED

THE U.S. GOVERNMENT IS A GREAT CLIENT…BUT THEY SHOULDN'T BE YOUR ONLY ONE

LESSONS LEARNED

ALWAYS BE PREPARED FOR AN AUDIT

LESSONS LEARNED

CHOOSE YOUR M/P RELATIONSHIP CAREFULLY…IT CAN'T JUST BE ABOUT $$$

LESSONS LEARNED

HIRE THE BEST TALENT

LESSONS LEARNED

STAY IN YOUR LANE
EXPLOIT YOUR NICHE

LESSONS LEARNED

STAY CLOSE TO HOME

LESSONS LEARNED

PROTECT YOUR REPUTATION

Thank You

Richard Brady, P.E., BCEE
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