

ThyssenKrupp Elevator Americas

May 12, 2014

NMSU Facilities
 1780 E. University
 Las Cruces, NM 88003

Subject: Elevator Priority

Mr. Coon

ThyssenKrupp is pleased to provide for New Mexico State University a compiled survey of your elevators and a priority list for your review. The basis of our priority is the following criteria:

- Safety
- Age
- Use
- Manufacturer
- Condition

Relative to priority, I have labeled each elevator sequentially. This is Thyssenkrupp Elevators recommendation with respect to modernizing the elevators.

Safety: Single bottom Jacks- Prior to 1972, hydraulic jacks were manufactured with a single wall bottom. In the event of moisture intrusion and/or contamination, the wall can erode and potentially rupture. This can lead to the elevator losing the hydraulic fluid at an undeterminable rate. The following elevators have been determined to have single bottom jacks. It is my recommendation to replace the Single bottom jacks prior to any modernization. In the event the elevator is aged in conjunction with a single bottom jack, I recommend you modernize in parallel (Noted with asterik *)

1	Branson East Passenger	Dover LMH *
2	Breland Hall (Modernized in 2002)	TKRUPP
3	Chemistry 55	EMCO *
4	Dove Hall (South Passenger)	MCE HMC1000
5	Hadley Hall	Esco *
6	Thomas & Brown	DOVER LMH *
7	Walden Hall	DOVER LMH *

AGE: The average life span for an elevator with typical usage is 25-30 years.

30 + years old (Before 1984):

8	Branson west passenger	Otis original
9	Branson east staff	Otis original
10	Branson loading dock freight	Otis original
11	Knox Hall	Dover
12	Science Hall # 2	Dover

25 -30 years old (1984-1989)

13	Business Administration	Dover Solid State
14	Computer Center 77	Dover Solid State
15	Corbett Center Kitchen Pass	Dover LMH
16	English (recently modernized)	Dover Solid State
17	Music #1	Dover Solid State
18	Music #2	Dover Solid State
19	Young Hall	Dover Solid State

20-25 years old (1989-1993)

20	Baseball	Dover DMC
21	Chemistry 96	Dover DMC
22	Corbett Center North West Pass	Dover DMC
23	Engineer Complex 2	Dover DMC
24	Engineer Complex 3	Dover DMC
25	Engineer Complex 3	Dover DMC
26	Science Hall # 1	Dover DMC
27	Skeen #1	Dover DMC
28	Skeen #2	Dover DMC
29	Skeen #3	Dover DMC
30	Softball	Dover DMC
31	Zuhl #1	Dover DMC
32	Zuhl #2	Dover DMC
33	Zuhl #3	Dover DMC

15-20 years old (1994-1999)

34	DABCC Library Pass	Dover DMC 1A
35	DABCC Classroom Pass	Dover DMC
36	DABCC Health Pass	Dover DMC
37	Jacob Hardman Center Pass	Montgomery
38	Milton	Montgomery
39	Williams Center Pass.	Montgomery

MANUFACTURER: There are elevator manufacturers that provide equipment that have reliability issues as well as replacement parts issues.

40	Conroy	Northern TC181
41	Garcia Hall	Northern TC181
42	Goddard Hall	Northern TC181
43	Housing	ESCO CUMV

CONDITION: The NMSU facilities maintenance crew has maintained the elevators to a very good standard given the quantity and use. Repairs to elevators are typically done on an as need basis.

BUDGET: For the purpose of budgeting. I have put together a matrix that defines costs for a typical hydraulic unit, Car Doors, Hoist way Doors, Cab Interiors.

DEFINITIONS:

Typical Hydraulic Mod \$ 58,000.00

- Controller-battery lowering & Solid State Starter included
- Power unit
- Door Operator
- Fixtures (Hall and Car)
- Car Operating Panel
- Traveling cable
- Landing system – Tape Selector

Car Door - \$ 2,190.00 ea.

- Interior of elevator cab door

Hoistway Door - \$ 2,190.00 ea.

- Exterior of car, one at each landing

Cab Interior - \$ 16,000.00

- Includes the two side walls, the back wall, hand rails and ceiling grid with lights.

Door Operator - \$ 5,300.00

- In the event an elevator has a front and rear door, add cost for additional door operator.

Example: 4 stop hydraulic with front and rear doors, rear door at bottom landing only. Customer requests budget numbers excluding interior but new car and hoistway doors. Each individual elevator will change based on voltage, travel, door size and type, door operator, etc.

1 x \$ 58,000.00 =	\$ 58,000.00
2 car doors x \$ 2,190.00 =	\$ 4,380.00
5 hoist way doors x \$ 2,190.00 =	\$ 10,950.00
1 door operator x \$ 4,400.00 =	\$ 5,300.00
Subtotal	\$ 78,630.00

Taxes

The remaining elevators have varying ages but are deemed maintainable. In the event there is a specific requirements such as ASME 17.01 2010 code compliance then each elevator and there application would be looked at individually.

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Our recommendation for modernization is to schedule 3-5 units per year until all units older than 25 years have been modernized. There are currently 19 units requiring modernization based on safety and age. Based on an average cost of \$ 75,000.00 per unit and an increase of 3% for labor and material costs, the suggested modernization cycle would be as follows. The exact cost will vary and will be determined upon request.

Fy-2015	5 units	\$ 375,000.00
Fy-2016	5 units	\$ 386,250.00
Fy-2017	5 units	\$ 397,837.50
Fy-2018	5 units	\$ 409,772.63

Upon completing the Safety and Aged units, I recommend modernizing the next 15 units over the next 3-5 years.

Fy-2019	5 units	\$ 422,066.00
Fy-2020	5 units	\$ 434,728.00
Fy-2021	5 units	\$ 447,770.00

At this point in the modernization cycle, after Fy-2021, individual elevator's can be addressed on an as need basis. Should you have any questions or require additional information, please feel free to contact me.

Respectfully,



Mark Prevot
Modernization Sales
Thyssenkrupp Elevator Company

Elevator Maintenance BRR List

Prepared By: Dale Harrell

Date: 08/13/2014

Based on ThyssenKrupp Report of 05/12/2014

Year	# of Units	Costs
FY - 15	5	\$400,000.00
FY - 16	5	\$400,000.00
FY - 17	5	\$400,000.00
FY - 18	5	\$400,000.00
FY - 19	5	\$400,000.00
FY - 20	5	\$400,000.00
FY - 21	5	\$400,000.00

Details

Year	Details
FY - 15	Branson West Passenger, Single Jack and Modernization; Breland Hall Passenger, Single Jack; Chemistry '55, Single Jack and Modernization; Dove Hall South Passenger, Single Jack and Modernization; Hadley Hall Passenger, Single Jack and Modernization
FY - 16	Thomas and Brown Passenger, Single Jack and Modernization; Walden Hall Passenger, Single Jack and Modernization; Conroy Honors Hall, Modernization and Makeover; Garcia Hall Passenger, Modernization and Makeover; Goddard Hall Passenger, Modernization and Makeover
FY - 17	Housing Passenger, Modernization and Makeover; Branson East Staff and Freight, Modernization; Knox Hall Passenger and Freight, Modernization
FY - 18	Science Hall #2 Passenger, Modernization; Business Complex Passenger, Modernization; Computer Center '77 Passenger, Modernization; Corbett Center Kitchen Passenger, Modernization; Pinion Dorm Passenger, Modernization and Makeover
FY - 19	ENGLISH BLDG Passenger, Modernization; MUSIC #1 AND #2 Passenger, Modernization; Young Hall Passenger, Modernization; Baseball Passenger, Modernization
FY - 19	Chemistry '96 BLDG Passenger, Modernization; Corbett Center North Passenger, Modernization; Engineering Complex II Passenger, Modernization; Engineering Complex III #1 and #2 Passenger, Modernization;
FY - 19	Skeen Hall #1, #2 and #3 Passenger, Modernization; Zuhl #1 and #2 Passenger,

Definitions

Modernization = Replace doors, controls, operators, fixtures, power unit, interior. Cost is based on voltage, travel, door size and operator type.

Single Wall Jack = the in ground elevator housing that contains the elevator jack has a single wall. Since 1982 the EPA has mandated that all elevator housings be double wall construction (like in ground gasoline tanks)

Makeover = The manufacturer of this elevator is no longer in business and or parts are no longer available, thus the controller requires replacement or upgrade to a current manufacturer's products. Pinion Hall requires replacement of the fork lift style jack.

