FINDING A HOME FOR A-Z AND EVERYTHING IN BETWEEN

University of Pittsburgh Library System (ULS)

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PURPOSE

Hillman Library, built in 1967, serves as the main library for the University Library System (ULS), and like many other libraries of its era, it prioritized the safe storage of books over reader comfort. In 2016, the ULS was given the opportunity to re-imagine the spaces and services in Hillman Library which at that time housed nearly 100K LF of collections.

In our LAC 2020 presentation we demonstrated the analytical and visualization tools used to determine what collections to send to storage and enable users to locate materials moving to and from swing spaces.

This poster describes how existing and new tools were used to plan and chart the final collection mapping to shift and move collections from various swing spaces to specific shelves on the renovated floors.

Construction needs on the ground floor required us to remove the collection from that floor earlier than expected (Spring 2022), and we had to map and estimate final collection footprints before the material flagged for storage could be removed from the shelves. We needed to determine where to divide the collection across the 3rd and 4th floors and provide the moving contractor an estimate of how much material would need to be moved and where.

OBJECTIVES

Our objective was to ensure a logical distribution of materials and an efficient process of physical relocation.

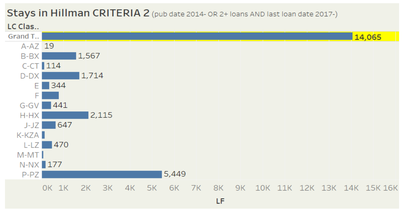
The following criteria were established and provided the parameters that informed our methodology:

- Items designated to remain on campus would fit in space allowed.
- Shelves in Hillman Library would not be filled more than 75-80% of capacity. In addition, buffer space would be built in to allow for growth and would vary by call number range and be based on recent acquisition patterns in each area.
- Call numbers would follow the LC class order and no LC class was split between floors.
- Contractors engaged to move the collection would have guidelines to know which shelves would contain specific call number ranges.

DESIGN

We used inventory reports from Alma Analytics and Tableau visualizations to estimate the footprint of the collection remaining in Hillman Library after criteria for sending items to storage were applied. To do so, we developed an additional functionality in our original collection modelling tool (designed to identify materials to send to storage) to enable complex Boolean operations. We created a parameter function in Tableau that allowed for combining criteria across filters using AND / OR operators. The use of this parameter allowed us to toggle between views of what would remain and what would transfer to Storage. (Fig. 1)

Figure 1: Shows the estimated linear footage of material designated to remain in Hillman library



We also examined recent acquisition rates across call number ranges to estimate future growth in different areas. We used the collection modelling tool to provide a count of items that were created within the last year in each LC Class and estimate the linear footage. Linear footage was estimated at .09 per book, or approximately 11 books per LF. The resulting table was exported as a crosstab spreadsheet. (Fig. 2)

We used XLOOKUP to populate columns in the main spreadsheet to include item count & estimated linear footage of material expected to remain in Hillman by LC Class, as well as item count & estimated linear footage of newly acquired material by LC class. We then added a column that multiplied new adds by 3 (to provide for three years of growth and account for underestimates due to the pandemic). We totaled the predicted remaining linear footage and the new growth estimates and then divided by 2 to 2.37 (roughly 75-80% shelf capacity) to get a range of shelves needed in each LC class. (Fig. 2)

Figure 2: Spreadsheet used to calculate shelves needed based on existing linear footage and estimates of growth.

LC Class (group)	Permanent LC Classification	Count of items	LF	annual new add LF	new adds x 3 years	Existing LF + 3 YEARS new adds	required in mapping	new numbers using 2.37
N-NX	N	781	70	4	12	82	40.8	35.5
	NA	404	36	2	7	43	21.6	18.8
	NB	50	5	0	1	6	2.9	2.5
	NC	101	9	1	2	11	5.4	4.7
	ND	247	22	1	3	25	12.6	11.0
	NE	16	1	0	0	2	0.9	0.7
	NK	89	8	1	2	10	5.0	4.3
	NX	253	23	1	2	25	12.4	10.8
P-PZ	P	2,658	239	7	20	259	129.4	112.5
	PA	1,748	157	4	12	169	84.3	73.3
	PB	50	5	0	0	5	2.6	2.3
	PC	1,316	118	14	42	160	80.1	69.6

We then counted the number of shelves designated for the general collection and mapped the LC classes across those shelves using the calculations from the spreadsheet as a guide.

Shelving counts were adjusted upward in areas of very high growth (e.g., literature) and rounded down in areas of no or low growth. Additionally, empty shelves were built in across sections and ranges to provide buffer space and room for shifting, if needed. (Fig. 3)

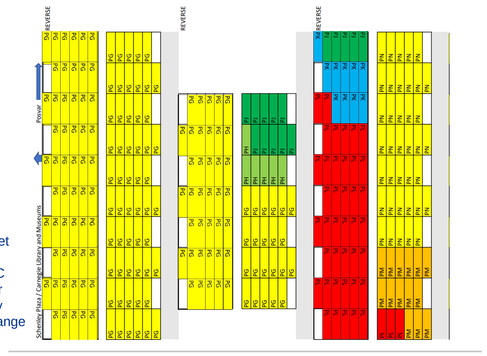


Figure 3: Spreadsheet used to estimate LC call number mapping by shelf and range

We also provided estimates to the contractor of growth space needed. We categorized each LC class as low, medium, high or very high growth and asked the moving contractor to adjust shelving fill rates to allow for expected growth.(Fig. 4)

Figure 4: Estimated levels of future growth by LC Class

Classification Code	growth level	no. of new items created August 2020 - April 2022	est. linear footage of growth
AC	low	2	0
AE	low	4	0
AM	low	4	0
AP	low	1	0
AS	medium	6	1
AZ	medium	7	1
B	high	129	12
BC	low	2	0
BD	medium	11	1
BF	medium	64	6

growth rate	est.LF growth every 2 years
low	<1
medium	between 1 - 9
high	between 10 - 74
very high	>75

We knew there likely would be adjustments needed to account for books on the shelves that were not in the inventory, items that were included in the inventory but missing from the shelves, and other scenarios. But the mapping gave the contractor general starting and ending points in which to stage chunks of the collection to create space for collections moving up from the lower floors, and fine-tuning what would be done in the final shifting.

FINDINGS

Our methodology proved to be effective:

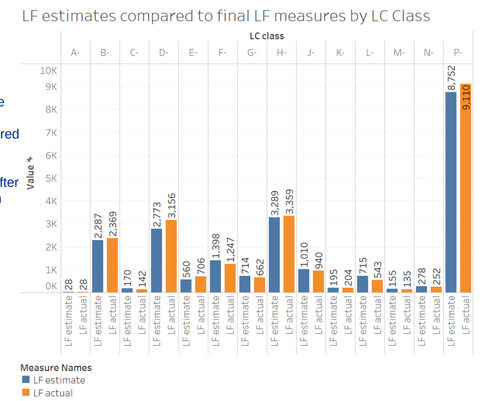
- Material fit in the space allotted and included space for growth.
- Large amounts of material were moved efficiently and in a short amount of time.
- LC classes were not split between floors. (Fig. 5)

Moreover, building a buffer space in the mapping was critical to account for any inventory anomalies.

This also provided targeted start and end ranges for call numbers for the movers to use and to ensure we had enough room for material to be shifted.

As more items were transferred, it was easier to discover mismatches between inventory reports and what was on the shelves. This led to catalog clean-up projects as well as plans for future inventory scanning and updates to the catalog to fine-tune reporting and ongoing collection maintenance and for sending additional items to our high-density storage facility.

Figure 5: Estimates of linear footage needed pre-move compared to final linear footage distribution after the collection move and shifting



PRACTICAL IMPLICATIONS

All our techniques are easily adaptable, replicable and can utilize freely available tools like spreadsheets and any visualization or graphing software.

They can be used for large or small moving projects alike and can aid with evaluating the composition and distribution of collections.

LIMITATIONS

Inventory data in the LMS could be messy and incomplete at times. Items listed on the inventory may be long lost or missing, and we found items on the shelf that were not listed in the inventory.

The exact linear footage of the collection at any given time is a moving target due to circulation, new additions, etc.

To fine tune this methodology, we could perform sampling of volume size by LC class to get an average by subject area since 11 volumes per linear foot may be too high in some areas and not high enough in others.