



## Project Lead The Way Day

**October 26, 2017  
Design Challenge**

*The following design challenge is a fictitious event and created for the purpose of providing middle and high school students the educational opportunity to participate in this activity to creatively develop design proposals for a fictitious park attraction. The content of this design challenge does not reflect any official position or opinion of Silver Dollar City or Missouri Project Lead The Way.*

### **What is Silver Dollar City®?**

Silver Dollar City® is an internationally awarded 1880s-style theme park located in Branson, Missouri, that features over 40 thrilling rides & attractions, live shows & concerts, 100 resident craftsmen demonstrating America's heritage crafts, award-winning food and 60 unique shops - all sitting atop one of Missouri's deepest caves. World-class festivals and events are showcased from spring through Christmas - during which the park is illuminated with over 5 million lights!

### **Call for Design Proposals**

Silver Dollar City® in Branson, Missouri, has issued a call for design proposals with initial video submission by Friday, October 20, 5:00 P.M. and poster and presentation submissions in person on Thursday, October 26, 9:30 A.M. Refer to the following information for required criteria and deliverables.

**Background Information:**

The proposed site for the new ride was previously used as a log flume ride. The current structure, a tower constructed of steel beams and wood stairs (see attached documents), was used to direct the guests to a height appropriate to launch guests down the flume. The structure is still in sound condition and can be used as part of the new attraction. There is additional land space around the tower that can be incorporated in the proposed design (see site photo).

**Design Challenge:**

Silver Dollar City® has a former ride site needing to be re-purposed to add to their existing family oriented amusement rides and attractions. There is an existing tower (see accompanying documentation) on site which must be incorporated into the final design. The theme for this design challenge is an eye-catching 1880s time-period attraction that will appeal to thrill ride seekers. Potential directions for the indoor or outdoor attraction could involve creativity with enhanced graphic design, virtual reality, bridge or building design, digital control on rides, gate counting controls, people movement at rides, kiosk design, and transportation system design.

**Design Team Requirements:**

The following Team requirements must be met to qualify for entry into the competition.

1. A design team must have no less than two (2) team members and no more than four (4) team members.
2. Each team member must be in the same grade range of the category they are entering (Middle School Category or High School Category). There will be two team categories: Middle School Team (grades 5- 8) and High School (grades 9-12).
3. 50% of the team members must be present to deliver the required poster and presentation to the judge(s). If a team has three members, two of the three members must be present.

**Design Constraints:**

The following minimum design constraints must be met to qualify for entry into the competition.

- a. The existing tower structure must be incorporated into the function of the attraction.
- b. The attraction cannot extend beyond the designated boundaries.
- c. Safety is of utmost importance. All design aspects must conform to theme park safety norms.
- d. All concepts must be realistic and viable, utilizing existing materials and technological capabilities (in other words, no "pretend" solutions).
- e. Design solutions must be the product of all team members. (Team members will be accountable for their contributions to the design process/solution)
- f. Facade, stair structures and general use of the tower can be altered. The super structure cannot be altered.
- g. Design solution must include "green" concepts, incorporating LEED standards (<http://www.usgbc.org/LEED/>)

**Design Deliverables:**

The following is a list of minimum deliverables for the formal presentation to the judges. A team can provide more, if desired.

1. A video of no more than 10 minutes in duration (.mp4 format) submitted on-line (directions will be provided to the email account provided with the team's registration). The video must include:
  - a. All team members and their roles for developing and presenting the proposed attraction.
  - b. The concept/theme of the proposed attraction.
  - c. A prototype of the proposed attraction in action.
  - d. A description of the novelty of the proposed attraction and how it meets the 1880s theme of Silver Dollar City.
2. A poster for presentation during an exhibition period at Silver Dollar City. The poster and presentation must include:
  - a. At least half of the team members must staff the poster exhibit.
  - b. The concept/theme of the proposed attraction.
  - c. A pictorial or schematic representation of the attraction.
  - d. Intended audience of the proposed attraction (kids, teens, adults, etc.).
  - e. Wow factor associated with the proposed attraction. Rationale for how this attraction will be of interest to patrons at Silver Dollar City.

3. A formal presentation via Power Point or some other presentation media. The team can bring a flash drive to be used on our laptop computers or they can bring their own laptop computer. The presentation must be no longer than 10 minutes in length. Presentations must include:
  - a. Description and rationale of proposed attraction.
  - b. Graphic representation of the design solution.
  - c. Demonstration in meeting the design constraints.
  - d. Documentation of the design process which could include engineering notebooks, Gantt Charts, Research References, Work Distribution, Business Plan, etc.
  - e. 3D models are acceptable, but are not necessary.

**Team registration procedures:**

1. Teams will send an email to Stuart Baur at ***baur@mst.edu*** with the subject: SILVER DOLLAR CITY PLTW ENGINEERING DAY. The deadline for emails for intent to submit an attraction proposal is Monday, October 2 by 5:00 P.M. The email will include:
  - a. Names and grades of team members.
  - b. School.
  - c. Middle or high school entry.
  - d. School representative contact information for team correspondence with Missouri PLTW.
  - e. Intent to submit an attraction proposal and declaration that no one outside of your team and school representative has contributed to your attraction proposal.
  - f. Email address and cell phone number to be used for correspondence, including for attraction proposal submission. The cell phone number should be capable of text message correspondence.

An email confirmation from Missouri PLTW will be sent with a team number assignment.

2. Attraction Proposal video submission requirements and procedures:
  - a. A Google drive folder will be shared using the team contact email.
  - b. The video must be no more than 10 minutes in duration.
  - c. The video file name must have the format SchoolName\_TeamNumber.mp4 using the team number assigned by Missouri PLTW.
  - d. The video must be submitted to the Google drive by Friday, October 20, 5:00 P.M.

An email of confirmation of receipt of the video will be sent to the school representative email for correspondence.

**SILVER DOLLAR CITY PLTW ENGINEERING DAY At Silver Dollar City on Thursday, October 26:**

1. Registration will be open from 9:00 A.M. to 10:00 A.M. at the park Guest Relations.
2. Team poster setup will be from 9:45-10:30 A.M. at the poster exhibition location (to be provided at Registration).
3. The poster exhibits will be from 10:30-11:15 A.M. Students not staffing their team's poster exhibit are encouraged to view other teams' posters and vote for the top 3 teams using provided Blue (1<sup>st</sup>), Red (2<sup>nd</sup>), and White (3<sup>rd</sup>) coins provided to them. Students should not vote for their own team in this process.
4. Lunch will be from 11:30 A.M.-12:15 P.M.
5. The judges will select the top 5 teams in each category for presentations based on video submission scores and poster voting results. Team advisors/instructors will be notified by text message by 12:30 P.M. with their selections and presentation times.
6. Team presentations will begin at 1:00 P.M. at the designated location (provided with the Registration materials). Teams are strongly encouraged to be at the presentation location and ready to present 10 minutes prior to their designated time. Team presentations will conclude at 2:40 P.M. Presentations are for 10 minutes with 5 minutes for questions from the judges.
7. An awards ceremony will begin at 3:00 P.M. at the presentation location. The ceremony will conclude by 4:00 P.M.

The rubrics for evaluating the video and team presentations are provided at the end of this document as a reference.

**Designer Team Awards:**

The high school and middle school categories will have 1<sup>st</sup>, 2<sup>nd</sup>, and 3rd place winners. 1st place teams will receive 2 one day 2017 tickets per team member and a souvenir drink mug to Silver Dollar City®. 2nd place teams will receive a Silver Dollar City hoodie and one 2017 ticket to Silver Dollar City. 3rd place teams will receive a Silver Dollar City drawstring bag or ballcap and souvenir mug. Plus, all of the teachers that have teams that place 1<sup>st</sup>, 2<sup>nd</sup> and 3rd will receive a 2018 season pass.

**Questions**

If you have questions regarding the Silver Dollar City Design Challenge competition, please contact:

Dr. Stuart Baur  
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