

Building a Case for
R&D TAX CREDITS

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Overview

- In general, the Research and Development (R&D) Tax Credit is available to taxpayers engaging in qualified research activities by providing tax credit equal to a percentage of certain eligible expenses called qualified research expenses (QREs). There are three main types of QREs:
 - Wages,
 - Supplies, and
 - Contractors
- In order for an activity to be deemed qualified research, it must meet the following four-part test:
 - New/Improved Business Component
 - Elimination of Uncertainty
 - Process of Experimentation
 - Technological in Nature

➤ Application of R&D: How Does it Apply?

- Firms operating in the building, construction, A/E space are continuing to innovate as the industry becomes increasingly competitive
- Technology has enabled these professions to continue to redefine their impact into design and delivery of a number of new solutions for their clients
- These include capabilities such as:
 - CAD/CAM tools,
 - BIM software,
 - GPS equipment,
 - In-house manufacturing, such as steel fabrication; and
 - Other tools such as drones.
- Construction firms are beginning to hire former and active engineers, designers and architects to maximize design-build capabilities

R&D IN THE INDUSTRY

ARCHITECTURE & ENGINEERING

➤ Qualified Research in Architecture

- Not all architecture focuses on building aesthetics – usability and building functionality are often most important considerations
- Architects maintain excellent records for credit substantiation:
 - Design renderings;
 - Several iterations;
 - Contemporaneous time tracking.
- Architects are required to take the same courses as engineers during curriculum such as:
 - Chemistry;
 - Physics;
 - Structural Engineering;
 - Foundation and Concrete Design; and
 - Design for Development.
- The architecture industry is rapidly changing
- New and environmentally-conscious design opportunities
- Opportunities for R&D tax incentives are often overlooked

› Examples of R&D Activities in the Industry

- Design-build construction,
- Design-assist construction,
- Environmental analysis,
- Implementing LEED building designs/initiatives,
- BIM, CAD/CAM,
- Fabrication,
- Developing new processes and techniques to improve construction efficiency, to impart new functionalities, or improve product quality, and
- High-tech equipment installation.

› Four Part Test Applied

The code requires that the architectural activities involve all of the following:

1. New or Improved Business Component
2. Elimination of Uncertainty
3. Process of Experimentation
4. Technological in Nature

› Four Part Test: Part 1 Applied

- Architecture firms must conduct activities aiming to create or deliver a new or improved product
- While processes can qualify, these are less frequent in the industry
- Maintenance and repair would typically not meet this standard
- Must be an improvement over and above the previous functionality

› Four Part Test: Part 2 Applied

- Uncertainty must persist as to the design of said product (i.e. the building design itself)
- This is satisfied if the architect based on its knowledge at the outset of the project does not have one clear and simple solution
- Only through an iterative process can the proper design be achieved

› Four Part Test: Part 3 Applied

- The uncertainty related to the ultimate design of the product must be resolved through experimentation
- In architecture, this is frequently satisfied if there are multiple iterations created to achieve a satisfactory solution
- Simple problems require simple solutions, complex analyses yield more potential

› Four Part Test: Part 4 Applied

- The iterative process must be driven by principles of hard science
- Aesthetics, social impact, cultural elements may be part of the evaluation, but are not rooted in hard science
- Functionality driven by principles of engineering, for example, is the target here

› Documenting the Process

- Often, A/E firms maintain contemporaneous time tracking systems
- These systems can be extremely helpful to tie activities, hours and people to qualified projects
- Ideally, these systems would track hours by phase and task
- Estimates are also allowed if supported by sufficient documentation

› Avoiding Pitfalls

- Contractual terms:
 - Time-and-Materials (T&M) work would be considered funded by the paying party and thereby excluded
 - There must be “economic risk” born by the architect
- Substantive issues:
 - Projects driven by non-functional considerations such as aesthetics, culture and other similar considerations

R&D IN THE INDUSTRY

CONSTRUCTION

➤ Qualified Research in Construction

- Construction firms are increasingly investing in new technologies and resources
- Trends toward design-build and design-assist engagements are enabling more opportunities
- R&D Tax Credits may be available to incentivize this growing trend
- Construction firms often generate supporting documentation through the course of their ordinary business such as:
 - BIM models;
 - CAD drawings;
 - Meeting minutes; or
 - Markups & redlines.

➤ More Examples of R&D

- Plant production system design and optimization,
- Dew point analysis to determine types of vapor barriers and location, and
- Energy efficiency design or improvements to increase system efficiencies.

› Specialty Matters: Construction

- **General Contractors:**
 - Design-Build or Design-Assist capabilities
 - “Quarterback” of the large project effort
 - Actively participate in effectuating end design
 - Large and/or complex projects often contain qualified R&D activity from the General Contractor
- **Subcontractors:**
 - MEP Contractors
 - Steel Fabrication & Erection Contractors
- **Construction Managers (CM):**
 - Active hand in the design-build or design-assist process
 - Large and/or complex projects may require qualified R&D activity from the CM
 - Projects that do not require innovative means and methods, CMs are likely not performing qualified activity

› Four Part Test Applied

The code requires that the construction activities involve all of the following:

1. New or Improved Business Component
2. Elimination of Uncertainty
3. Process of Experimentation
4. Technological in Nature

› Four Part Test: Part 1 Applied

- Construction firms may qualify under a number of different business components
- Companies can be aiming to improve the end product through suggesting changes or revisions to the design
- Others may be developing and orchestrating a process for effectively implementing the project
- Occasionally, new techniques are trialed and can be experimental in nature

› Four Part Test: Part 2 Applied

- There must be uncertainty as to any business component whether product, process or technique related
- If only one solution is considered or the fix is obvious, uncertainty is unlikely
- Multiple ways to solve a problem are a good sign of uncertainty

› Four Part Test: Part 3 Applied

- The uncertainty must be resolved through experimentation
- For product related improvements, recommending changes or different iterations to the design could be qualified
- For process, evaluating different plans or strategies for development must be unique to the project
- For techniques, trial and error application may qualify as experimentation

› Four Part Test: Part 4 Applied

- This process must be rooted in principles of hard science
- These process cannot be solely driven by costs, preference or other similar motivation
- Instead, the process should be intertwined with engineering fundamentals, for example

› Documenting the Process

- Documentation required for a credit claim is high
- Tying qualified employee involvement to projects is the key
- Emails, correspondences, iterations and discussions should be kept if related to R&D functions
- Estimates are also allowed if supported by sufficient documentation

› Avoiding Pitfalls

- Contractual terms:
 - Time-and-Materials (T&M) work would be considered funded by the paying party and thereby excluded
 - There must be “economic risk” born by the construction firm
- Substantive issues:
 - Tying qualified activity to research projects without a well-maintained tracking system will need to be supported/shown through a variety of documentation

R&D IN THE INDUSTRY

OTHER INDUSTRIES

➤ Specialty Matters: Other Specialties

A number of other specialties involved in new or improved buildings may be eligible

- Environmental Testing:
 - Testing alone would only support other researching parties
 - Providing remediation or preventative solutions/recommendations is the key
 - Firm/Fixed price engagements are required
- Building Materials Manufacturers:
 - Ready-Mix Concrete manufacturers
 - Specialty building products

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