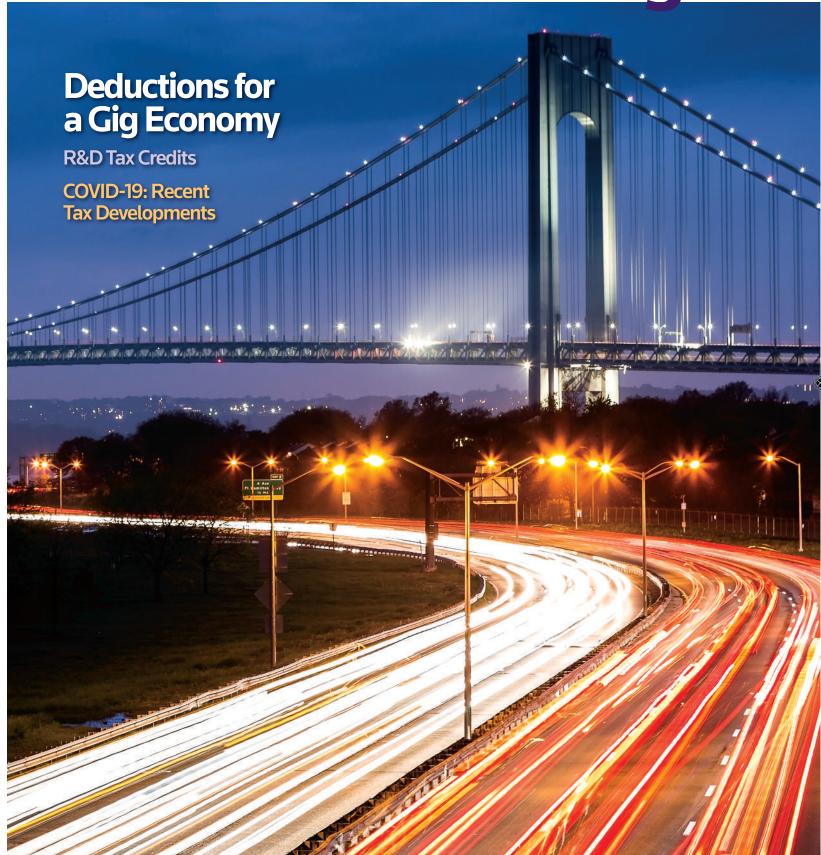


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Practical Tax Strategies







ARCHITECTURE, ENGINEERING, AND

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Section 41 R&D tax credit

Section 41 research and development (R&D) tax credits are available to Architectural, Engineering, and Construction (AEC) industry companies that design and develop new or improved products, processes, methods, techniques, or materials. In addition to "revolutionary" activities, research credits may also be available to companies performing "evolutionary" activities or incremental improvements to their own products and production processes.

R&D tax credits are an effective way for companies in the AEC industry to generate additional cash flow while innovating and increasing their capabilities to meet continuously evolving new technical market requirements. Time that employees spend developing innovative solutions while attempting to solve complex architectural design and structural engineering challenges can potentially be included as a research expense for their company toward the R&D tax credit.

Innovation for the purposes of Section 41 may include the following:

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- Research to discover more efficient methods, techniques, or materials for use in engineering
- Experimentation with innovative new designs.
- Integration of emerging technologies or software applications into production processes or service offerings.

In addition, recent tax legislation has made the R&D tax credit more accessible to qualifying companies than ever before. The Protecting Americans from Tax Hikes (PATH) Act of 2015¹ made the R&D tax credit permanent and more useful for small and mid-size businesses. The Tax Cuts and Jobs Act of 2017² lowered the corporate tax rate, while preserving and keeping permanent the R&D tax credit for qualifying U.S. businesses.

Section 41 qualification criteria—the four-part test

For activities to qualify as research, the taxpayer must show that the activity meets each of the following four tests:

1. Activities must be intended to resolve technological uncertainty which exists at the outset of the project or initiative. The uncertainty may be related to the capability or methodology for developing or improving the business compoResearch and development (R&D) tax credits are available to Architectural, Engineering, and Construction (AEC) industry companies for activities that meet Section 41 requirements.





- nent, or the appropriate design of the business component. Expenditures must be treatable as experimental expenses under Section 174;
- 2. Activities must rely on a hard science, such as engineering, computer science, biological science, or physical science;
- The activities must relate to the development of a new or improved business component, defined as new or improved products, processes, internal use computer software, techniques, formulas, or inventions to be sold or used in the taxpayer's trade or business; and,
- 4. Substantially all qualified activities must constitute a process of experimentation involving testing and evaluation of alternatives to eliminate technological uncertainty. This might include assessing a design through modeling, testing or computational analysis.

Tax Court case—Populous Holdings

Taxpayers within the AEC industry received a big win from the Tax Court in December 2019. The Tax Court's decision in *Populous Holdings*, reaffirmed that AEC industry companies contracted by developers or other clients are indeed eligible to claim R&D tax credits for research activities they perform. This has long been a contentious issue between the IRS and AEC Industry taxpayers.

Populous Holdings, an architectural design services company, had claimed R&D tax credits on its 2010 and 2011 tax returns totaling

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> nearly \$300,000. The IRS disallowed these claims, arguing that the research activities were funded by Populous clients who contracted with the company for its services.

> Contracted research is considered funded and ineligible for R&D credits unless (1) payment to the contractor is contingent on the success of the research, and (2) the contractor retains substantial rights in the research. Similar to the Geosyntec4 case of 2015, Populous and the

- P.L. 114-113, 12/18/2015.
- ² P.L. 115-97, 12/22/2017.
- ³ Populous Holdings, Inc., Tax Court order, 12/6/2019.
- Geosyntec Consultants, Inc., 115 AFTR2d 2015-644 (CA-11, 2015).

IRS agreed to limit their analysis to the funding issue, stipulating the qualifying nature of the underlying research activities. The parties agreed to review five of the more than 100 contracts during the timeframe of the claimed credits. All five contracts selected for review were fixedprice type arrangements, where Populous was obligated to meet all client requirements for a lump sum or fixed fee. Any additional cost overruns necessary to meet project requirements would have to be absorbed by Populous.

In his decision, Judge Joseph Robert Goeke referred to the earlier Geosyntec ruling, which concluded in general that fixed-price contracts are inherently risky to the contractor, and are therefore not considered funded. The Tax Court found that in each of the five fixedprice contracts, payments to Populous were indeed contingent on the success of the research. Other clauses from these contracts also favored Populous, such as the client having the right to review and approve Populous' designs, the client having the right to dispute invoices, and Populous bearing the cost of design revisions.

On the rights issue, the Tax Court relied on the decades old Lockheed Martin⁵ case, which established that a contractor retains substantial rights in the research performed for a third party, so long as the contractor retains the rights to use the research results in his or her trade or business, even if such rights are not exclusive. None of the contracts under review by the parties included provisions prohibiting Populous from using the results of its research, nor did they include provisions requiring Populous to pay for the right to use the results of its research. Thus, it was held by the Tax Court that Populous retained significant intellectual property rights to the research performed.

This Tax Court decision will now be applicable to other similar cases, providing clarity and relief to AEC companies claiming R&D tax credits under fixed-price arrangements.

Calculating the R&D tax credit

There are currently two available methods for calculating the federal R&D tax credit. The traditional or "regular" method relies on a base period of expenses and gross receipts from the mid-1980s, which can prove cumbersome to many companies. The more recently introduced Alternative Simplified Credit (ASC) method has become far more popular because it only requires examination of

Lockheed Martin Corp., 85 AFTR2d 2000-1495 (Fed. Cir., 2000).

expenses in the tax credit year and for the prior three years.

The R&D credit is comprised of the following types of Qualified Research Expenses (OREs):

- Wages paid to employees for qualified activities.
- Supplies used and consumed in the R&D process.
- 3. Contract research expenses paid to a third party for performing Qualified Research Activities (QRAs) on behalf of the taxpayer. These expenditures will be allowed at 65% of the actual cost incurred.

Examples of AEC industry qualifying projects

The following are examples of projects in the AEC industry that qualify for the research credit:

Example 1: Company designed a new laboratory science building for a major university. The facility was being designed to dramatically improve the building's functionality, utility, quality, and reliability. Because the company was designing the building for use as a scientific laboratory, there were certain stringent criteria that had to be met, both for specific pieces of operating equipment and for several sensitive areas of the structure. The company had no prior experience in meeting such criteria, and technical uncertainty was therefore prevalent throughout the project.

An enormous amount of technology was incorporated into the design plans both for added functionality and performance. The building was also designed for LEED (Leadership in Energy and Environmental Design) certification and therefore held to exceptionally high energy and environmental standards.

A major area of experimentation in the project was the vibration criteria which had to be met in order to guarantee that technical equipment being installed in the laboratory would function properly and in certain sensitive areas of the laboratory where testing would be performed. There were numerous mechanical challenges in terms of limiting vibrations from numerous sources which all had to be overcome, verified, and documented.

Wind turbines were installed and then removed as a part of the validation process. This project also included design of a unique spine-

like lateral system in support of a two-story glass curtain wall using a cable system. This approach had never been attempted before by the company. After extensive analysis of the expenditures and activities involved in this project, it was determined to qualify for purposes of the R&D tax credit.

Example 2: Company evaluated the potential retrofit of a power station with wet mechanical draft cooling towers, as well as a wide range of alternative technologies in order to assess and mitigate its impacts to air quality, aquatic and terrestrial resources, climate change, and a range of other environmental areas. In doing so, they developed modeling techniques for assessing the air quality impacts on surrounding land uses of salt water drift from the cooling towers' exhaust stack. They also developed a process for evaluating and documenting the feasibility of retrofits employing a range of technologies, including different types of cooling towers-mechanical draft, natural draft, in-line and back-to-back; and other alternatives such as air cooled condensers, indirect dry cooling, use of groundwater and sewage treatment plant effluent for once-through cooling, and reverse-osmosis desalination of cooling tower make-up water. This project was instrumental in developing the firm's capabilities for evaluating power plant retrofits from an environmental and engineering perspective.

Activities in the project relied extensively upon the principles of physics, chemistry, mathematics, atmospheric and climate science, acoustics, terrestrial and aquatic biology, ecology, thermodynamics, fluid mechanics, mechanical engineering and chemical engineering. There was a process of experimentation throughout the project in which the feasibility of several power plant retrofit alternatives were evaluated and the most appropriate ways to model and mitigate air quality impacts were developed. After extensive analysis of the expenditures and activities involved in this project, it was determined to qualify for purposes of the R&D tax credit.

Conclusion

AEC industry companies are eligible to claim R&D tax credits for research activities they perform that meet Section 41 requirements.

R&D TAX CREDITS JULY 2020 PRACTICAL TAX STRATEGIES 15